The EU's Climate and Energy Package

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The EU's Climate and Energy Package: Environmental integration and international dimensions

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THE EU'S CLIMATE AND ENERGY PACKAGE: ENVIRONMENTAL INTEGRATION AND INTERNATIONAL DIMENSIONS

Kati Kulovesi, Elisa Morgera and Miquel Muñoz

INTRODUCTION

The EU Climate and Energy Package (the Package) is a complex and comprehensive set of legal acts aimed at responding to global and EU-wide climate change and energy challenges and integrating climate change considerations into a range of sectors and policies. As the Package illustrates how the body of legal norms related to climate change is expanding rapidly and becoming increasingly specialized,[1] assessing its innovations and broader implications from the viewpoint of general EU law becomes more difficult. Not only is the Package closely linked to the EU's position in the negotiations on a future climate change regime under the United Nations Framework Convention on Climate Change (UNFCCC)[2] but it also features other intertwined international dimensions, ranging from its relationship to World Trade Organization (WTO) law[3] to the EU's negotiating position in other multilateral fora, such as under the Convention on Biological Diversity (CBD)[4] and discussions on 'green growth' in the lead-up to the 2012 UN Conference on Sustainable Development (known as "Rio+20").[5] The Package also has significant implications for the EU's external relations at the bilateral level. Against this background, this article analyzes the Package to assess the way in which the EU attempts to use its internal legislation to influence international processes, on the one hand; and, to assess the influence of international law on EU law, on the other hand. While the phenomenon of 'globalizing' EU law has not escaped the attention of political scientists[6] and EU lawyers,[7] this article seeks to bring into the spotlight the complex interactions between the legal tools that are used to these ends: inwardly, legislative choices at EU level;[8] and outwardly, reliance on EU law in various multilateral fora and bilateral agreements.

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[1] The argument has been made that climate change law is in the process of becoming a distinct legal discipline. See Kulovesi, "Book Review: *The International Climate Regime: A Guide to Rules, Institutions and Procedures* by Farhana Yamin and Joanna Depledge; and *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work* edited by David Freestone and Charlotte Streck", XIX *Finnish Yearbook of International Law* (2008), 389-398.

[2] United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 Mar. 1994) 1771 UNTS 107 (UNFCCC). These links are illustrated in Oberthür and Pallemaerts, *The New Climate Policies of the European Union: Internal Legislation and Climate Diplomacy* (VUB Press, 2010), pp. 27-64.

[3] Final Act of the 1986-1994 Uruguay Round of Trade Negotiations (adopted 15 Apr. 1994, entered into force 1 Jan. 1995) 1867 UNTS 14 (WTO Agreements).

[4] Convention on Biological Diversity (adopted 5 Jun. 1992, entered into force 29 Dec. 1993) 1760 UNTS 79 (CBD).

[5] The General Assembly, at its sixty-fourth session, adopted resolution A/RES/64/236 convening in 2012 a United Nations Conference on Sustainable Development at the highest possible level, including Heads of State and Government or other representatives, with a two-fold focus on the "green economy" in the context of sustainable development and poverty eradication; and on the institutional framework for sustainable development.

[6] Kelemen, "Globalizing European Union Environmental Policy", Princeton Annual Workshop on European Integration, 1 May 2009, < http://www.princeton.edu/~smeunier/Kelemen.doc> accessed 8 Nov. 2010. Kelemen mentions examples related to climate change, GMOs, trade and environment, and chemicals.

[7] de Witte, "International law as a tool for the European Union", 5 EUConst (2009), 265–283.

[8] See also Vedder, "Diplomacy by Directive: an analysis of the international context of the emissions trading directive" (SSRN Working Paper, SSRN-id 1477371) <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1477371>.

THE EU CLIMATE AND ENERGY PACKAGE AT A GLANCE

At the 2007 Spring European Council, EU Heads of State and Government decided to adopt an integrated approach to climate and energy policy in order to transform the EU into a low-emission and highly energy efficient economy.[i] The European Council committed to the objective known as 20-20-20 by 2020,[ii] which consists of reducing greenhouse gas emissions by 20% from 1990 levels,[iii] increasing the share of renewable energy from 8,5% to 20%,[iv] and improving energy efficiency by 20%, all to be achieved by the year 2020.[v] At the same time, the European Council indicated that the EU would step up its emission reduction commitment to 30% by 2020 in the context of a comprehensive international climate agreement.[vi]

In January 2008, the European Commission proposed a package of measures to implement the 20-20 targets, including legislative proposals on emissions trading,[vii] effort sharing between Member States in non ETS-sectors,[viii] renewable energy[ix] and carbon capture and storage.[x] These measures form a coherent package commonly known as the EU Climate and Energy Package.

The Package was subject to intense negotiations especially during the French EU Presidency during the second half of 2008. On 11-12 December 2008, the Package was considered by the European Council resulting in an agreement by the Heads of State and Government with some modifications to the initial proposals.[xi] The European Parliament agreed to the Package on 17 December 2008, and, following the co-decision procedure, the Council gave the Package the final seal by adopting the new acts on 6 April 2009.[xii] It entered into force in June 2009.

The main elements of the Package were published in *OJ* L 140, 5.6.2009. They are:

- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (hereinafter, **Renewables Directive**);
- Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community (hereinafter, **EU ETS Directive**);
- Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC (hereinafter, **Fuel Specification Directive**);
- Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 (hereinafter, **CCS Directive**);
- Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO2 emissions from light-duty vehicle (hereinafter, **Passenger Car Regulation**); and
- Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 (hereinafter, **Effort-sharing Decision**).

i. Presidency Conclusions of the Brussels European Council, 8-9 March 2007, 7224/1/07, at 10-12 and 19-18
ii. These slogans are reflected in Commission, "20 20 by 2020 Europe's Climate Change Opportunity" (Communication) COM 2008(30) final, 23 Jan. 2008
iii. Compared to 1990 levels.
iv. The 20% energy efficiency goal had been previously established by the 2006 European Action Plan for Energy Efficiency, COM(2006)545 final, 19 Dec.2006.
v. Presidency Conclusions of the Brussels European Council, 8-9 March 2007, 7224/07, at 12.
vi. Ibid.
vii. Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading system of the Community, COM(2008) 16 final, 23 Jan. 2008.
viii. Proposal for a Decision of the European Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, COM(2008) 17 final, 23 Jan. 2008.
ix. Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources, COM(2008) 19 final, 23 Jan. 2008.
x. Proposal for a Directive of the European Parliament and of the Council on the geological storage of carbon dioxide and amending Council Directives 85/337/EEC, 96/61/EC, Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC and Regulation (EC) No 1013/2006, COM(2008) 18 final, Brussels, 23 Jan. 2008.
xi. Elements of the final compromise regarding the energy and climate change package as agreed by the European Council at its meeting on 11 and 12 December 2008, 17215/08, 12 December 2008.
xii. European Parliament, 17 December 2008. Council of the European Union, 6 April 2009, 8434/09. Available at: <http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/misc/107136.pdf>.

The EU Treaty-based requirement of environmental integration will be used as a lens to analyse the Package. Environmental integration is one of the general principles of EU law, framed in legally binding terms by the Treaty on the Functioning of the European Union (TEFU), which provides that environmental protection requirements must be integrated into the definition and implementation of the EU's policies and activities.[9] In this article, both the external and internal dimensions of environmental integration will be referred to. *External* environmental integration entails that the EU environmental objectives, principles and criteria[10] are "applied" in other policy areas in the same way as they must be applied in the environmental policy: that is, that policy areas other than environmental protection must "pursue" the environmental objectives of the EU, "aim at" or "be based on" its environmental principles, and "take account of" its environmental criteria.[11] *Internal* environmental integration, in turn, entails that EU environmental law itself is to be construed and interpreted broadly, taking into consideration all of the EU environmental objectives, principles and criteria,[12] basically requiring a holistic approach to EU environmental law-making.[13]

For present purposes, external environmental integration serves to assess the extent to which the Package has contributed to integrating climate change concerns into non-environmental

[9] Art. 11 of the Treaty on the Functioning of the European Union (entered into force 1 Dec. 2009) [2010] OJ C83/47 (TFEU) reads: "Environmental protection requirements must be integrated into the definition and implementation of the Union policies and activities, in particular with a view to promoting sustainable development."
[10] Which are expressed in Art. 191 TFEU.
[11] Dhondt, *Integration of Environmental Protection into Other EC Policies* (Europa Law Publishing, 2003), p. 84.
[12] Ibid., p. 179, on basis of Joined Cases C-175/98 and C-177/98, *Criminal proceedings against Paolo Lirussi and Francesca Bizzaro*, [1999] ECR I-6881; Joined Cases C-418/97 and C-419/97, *ARCO Chemie Nederland Ltd v Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer and Vereniging Dorpsbelang Hees, Stichting Werkgroep Weurt+ and Vereniging Stedelijk Leefmilieu Nijmegen v Directeur van de dienst Milieu en Water van de provincie Gelderland*, [2000] ECR I-4475; and Case C-318/98 *Criminal proceedings against Giancarlo Fornasar, Andrea Strizzolo, Giancarlo Toso, Lucio Mucchino, Enzo Peressutti and Sante Chiarcosso*, [2000] ECR I-4785, where the Court held broad interpretations EU waste legislation.
[13] For a more detailed discussion, see Morgera, "An introduction to EU environmental law (from the viewpoint of international law)", Edinburgh School of Law Working Paper (forthcoming SSRN 2010).

EU policies, such as energy and industrial development.[14] In that respect, the requirement of external environmental integration should guide the enactment of EU secondary legislation, which – while not necessarily giving priority to the environmental protection objectives of the Treaty[15] - requires EU Institutions to systematically take them into account in other policy areas[16] Internal environmental integration, in turn, serves to assess the extent to which the Package takes a holistic approach to environmental protection, ensuring that other sectoral environmental initiatives consider climate change implications, and at the same time that broader environmental concerns are fully accounted for in devising and implementing climate change measures (that is, that climate change response measures are environmentally sustainable). Internal environmental integration is gaining importance at the international level: the vast majority of multilateral environmental agreements have developed a climate change component;[17] while the possible negative environmental impacts of some of the proposed responses to climate change are increasingly being identified and addressed, with a view to proactively ensuring their environmental sustainability.[18]

Analyzing the Package from the point of view of environmental integration is critical in the light of the enormous complexity of climate change as an environmental, economic, social and security challenge: greenhouse gas emissions are produced by a multitude of actors, from private citizens to multinational corporations, through a wide range of activities. To avoid dangerous climate change, significant climate change mainstreaming will be necessary in the coming decades. The Package's objective to make "the European economy a model for sustainable development in the 21st century" and commit to an economic transformation towards a low-carbon future "requiring major political, social and economic effort,"[19] begs the question: has the Package succeeded in integrating climate change considerations into a range of key sectors, while duly considering potential negative environmental implications of climate policies?

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[14] Jans and Vedder, *European Environmental Law* (Europa Law, 2008), p. 17.

[15] Art. 191(1) TFEU reads as follows: "Union policy on the environment shall contribute to pursuit of the following objectives: preserving, protecting and improving the quality of the environment, protecting human health, prudent and rational utilisation of natural resources, promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change."

[16] The justiciability of the principle against EU Institutions is discussed by Jans and Vedder, cited *supra* note 14, pp. 20-21, who conclude that "only in very exceptional cases (i.e. manifest error of appraisal) a measures will be subject of annulment because certain environmental objectives have not been taken sufficiently into account" (on the basis of the Case C-341/95, *Gianni Bettati*, [1998] ECR I-4355).

[17] See, for instance, the Resolution on Climate Change and Migratory Species (UN Doc UNEP/CMS/Resolution 8.13, 2005) adopted by the parties to the Convention on the Conservation of Migratory Species of Wild Animals (adopted 23 Jun. 1979, entered into force 1 Nov. 1983) 1651 UNTS 333 (Convention on Migratory Species); COP Resolution X.24, "Climate Change and Wetlands" (adopted 4 Nov. 2008) by the parties to the Convention on Wetlands of International Importance especially as Waterfowl Habitat (adopted 2 Feb. 1971, entered into force 21 Dec. 1975) 996 UNTS 245 (Ramsar Convention); and World Heritage Committee Decision 29COM 7B.a (adopted 17 Jul. 2005) by the parties to the Convention Concerning the Protection of the World Cultural and Natural Heritage (adopted 16 Nov. 1972, entered into force 17 Dec. 1975) 1037 UNTS 151 (World Heritage Convention).

[18] The CBD, cited *supra* note 4, has been increasingly addressing the environmental sustainability of response measures to climate change, such as ocean fertilization (for which it adopted an implicit moratorium through COP Decision IX/16C) and geo-engineering (for which a similar approach will be considered by the Conference of the Parties in Oct. 2010 – see SBSTTA Recommendation XIV/5 In-depth review of the work on biodiversity and climate change, para 8(w), UN Doc UNEP/CBD/COP/10/3 (30 Jun. 2010)). Generally on the biodiversity impacts of mitigation and adaptation measures, see Secretariat of the Convention on Biological Diversity, "Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change" (Technical Series, No. 41, Montreal 2009).

[19] Commission, "20 20 by 2020. Europe's Climate Change Opportunity" (Communication) COM(2008) 30 final, 23 Jan. 2008 (hereinafter, CCS Proposal).

To answer to this question, this article starts by sketching the history of EU's climate policy and of the Package. Subsequent sections will discuss key elements of the Package, namely changes to the EU Emissions Trading Scheme (EU ETS)[20] and the Effort Sharing Decision,[21] as well as the Directives on Carbon Capture and Storage (CCS)[22] and on Renewable Energy,[23] focusing particularly on its sustainability criteria for biofuels. In discussing environmental integration, the article will highlight the multifaceted international dimensions of the Package: focusing on the interplay between internal and external environmental integration will in fact allow to coterminously highlight the interplay between internal and external EU law and policy initiatives. These observations pave the way for our conclusions on how the Package exemplifies the complex web of internal and external legal tools that the EU uses to pursue its climate change objectives while seeking environmental integration.

21. THE ASCENT OF EU CLIMATE POLICY

The problem of climate change (or 'greenhouse effect' as it was then called) was first recognised at the Community level in the late 1980s,[24] At that time, the Intergovernmental Panel on Climate Change (IPCC) was being created, and the intergovernmental negotiation process resulting in the UNFCCC was yet to be launched.[25] In response to the 1992 Rio Earth Summit's adoption of Agenda 21[26] and the UNFCCC, the EU included climate change as one of seven themes in the 1993 Fifth Environment Action Programme.[27] In 2002, climate change was upgraded to one of four priority action areas in the Sixth Environment Action Programme.[28] The EU has progressively elevated climate change as a priority in its overall agenda on sustainable development and international cooperation, building upon the UN-driven inclusion of climate change among key threats to global security.[29] The high political priority given to climate change is now reflected in the TFEU, which highlights climate

[20] Parliament and Council Directive 2009/29/EC, [2009] OJ L140/63, amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community, [2003] OJ L275/32 (the EU ETS Directive).

[21] Parliament and Council Decision 406/2009/EC on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, [2009] OJ L140/136 (Effort-Sharing Decision).

[22] Parliament and Council Directive 2009/31/EC on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation 1013/2006/EC, [2009] OJ L140/114 (CCS Directive).

[23] Parliament and Council Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, [2009] OJ L 140/16 (Renewables Directive).

[24] European Parliament, "Resolution on Measures to Counteract the Rising Concentration of Carbon Dioxide in the Atmosphere (the "Greenhouse" Effect)" [1986] OJ C255/272; Communication to the Council on the Greenhouse Effect and the Community - Commission Work Programme concerning the Evaluation of Policy Options to Deal with the Greenhouse Effect COM(88) 656, 16 Nov. 1988; and Council, "Resolution of 21 Jun. 1989 on the Greenhouse effect and the Community" [1989] OJ C183/4. For a more detailed overview, see Mechling, "Emissions trading and national allocation in the Member States: an Achilles heel of European climate policy?", 5 YEEL(2005), 113-156, at 119-120.

[25] The UNFCCC process was launched by UN General Assembly Resolution 45/212, 21 Dec. 1990. The UNFCCC was agreed in 1992 and entered into force in 1994, cited *supra* note 2.

[26] Agenda 21 – Global Programme of Action on Sustainable Development UN Doc. A/CONF.151/26/REV.1, vols .I – III, 3 – 14 Jun. 1992 (Agenda 21).

[27] Council and the Representatives of the Governments of the Member States, "Towards Sustainability" [1993] OJ C138/1, at 42.

[28] Parliament and Council Decision 1600/2002/EC laying down the Sixth Community Environment Action Programme, [2002] OJ L 242, at 1-15.

[29] Morgera and Marín Durán, "The UN 2005 World Summit, the environment and the EU: priorities, promises and prospects", 15 RECIEL (2006), 1-18.

change among the global environmental issues for which the EU is expected to play a critical role at the international level.[30] Reading this provision together with the environmental integration requirement points to an obligation to mainstream climate change in other EU policy areas.[31] This legal dimension is coupled with key institutional developments, such as the increasing role of the European Council in climate change decision-making at the EU level, thus establishing climate change as an issue for EU Heads of State and Government,[32] and the creation of a separate climate change-focused Directorate-General (DG) within the European Commission (DG-CLIMA), comprising activities formerly in DG Environment, DG External Relations and DG Enterprise and Industry.[33] It remains unclear whether the securitization of climate change[34] will also lead to an involvement in climate politics of the High Representative of the EU for Foreign Affairs and Security Policy,[35] although the European Parliament has already made such a recommendation.[36]

While these developments have certainly contributed to raising the profile of climate change within the EU, the priority attached to climate change has been received with caution and possibly concern by leading commentators, who saw a possible risk for achieving internal environmental integration: Lee stressed, for instance, that "[p]icking one environmental problem (however serious) has to raise certain concerns about ongoing efforts to take a more holistic, integrated and sophisticated approach to environmental governance."[37] On the other hand, this can be interpreted more positively in terms of external environmental integration, as leading to a 'new phase in environmental governance in the EU', where climate change as a 'high politics' environmental issue will bear considerable potential for 'mutual integration of climate change concerns with energy and security policy.'[38]

The ascent of EU's climate change policy legislation has been closely linked to the EU's desire to play an international leadership role in the fight against climate change. Already in the early 1990s during negotiations leading to the UNFCCC, the EU (unsuccessfully) pushed

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[30] Art. 191(1) TFEU.
[31] Morgera, "Relevance beyond borders: recent developments in EU environmental law and policy", 40(5) *Environmental Policy and Law* (forthcoming 2010).
[32] Kelly, Oberthür and Pallemaerts, "Introduction" in Oberthür and Pallemaerts, see note 2 supra, pp. 11-25, p. 13; and Skjaerseth and Wettestad, "The EU emissions trading system revised (Directive 2009/29/EC)" in Oberthür and Pallemaerts, see note 2 supra, pp. 65-91, p. 74, 83. This seems to have resulted in a "record-speed legislative process" for the Package, see Oberthür and Pallemaerts, "The EU's internal and external climate policies: a historical overview" in Oberthür and Pallemaerts, see note 2 supra, pp. 27-63, p. 47; and also Skjaerseth and Wettestad, see this note, p. 83.
[33] See "Commission creates two new Directorates-General for Energy and Climate Action" (Press Release) IP 10/164, 17 Feb. 2010.
[34] Commission, "Climate Change and International Security" (Paper from the High Representative and the European Commission to the European Council, S113/08) 14 Mar. 2008.
[35] van Schaik, "The sustainability of the EU model for climate diplomacy" in Oberthür and Pallemaerts, see note 2 supra, pp. 251-280,pp. 270-273; see also van Schaik and Egendorfer, "Improving the climate: will the new Constitution strengthen the EU's performance in international climate negotiations?" (Centre for European Policy Studies, Policy Brief No. 63/February, Brussels, 2005).
[36] The European Parliament called on the EU's High Representative and the Commissioner responsible for climate action to lead a new "climate diplomacy" in the European Parliament resolution on the outcome of the Copenhagen Conference on Climate Change (10 Feb. 2010), para 7.
[37] Lee, "The environmental implications of the Lisbon Treaty", 10 *Environmental Law Review* (2008), 131-138, at 133.
[38] von Homeyer, "The evolution of EU environmental governance" in Scott (Ed.), *Environmental Protection: European Law and Governance* (OUP, 2009), pp. 1-26, p. 26.

for strong international commitments.[39] An important step was taken in May 2002 when the then European Community and its fifteen Member States ratified the Kyoto Protocol,[40] a particularly significant move coming a year after the US announced that it would not be ratifying the Protocol.[41,] The EU subsequently sought to show its leadership by creating the EU Emission Trading Scheme (EU ETS) when the future of the Kyoto Protocol was still hanging in balance,[42] and used its political clout to secure the Protocol's entry into force.[43] The Climate and Energy Package can be seen as yet another attempt by the EU to 'lead by example' at a time when both the legal shape and details of future international climate change cooperation under the UNFCCC remain undecided.

With the Package, the EU emphasises that it already has in place the regulatory framework to implement key aspects of its climate policy beyond the Kyoto Protocol's first commitment period, ending in December 2012. This is a notable achievement, though the 20% by 2020 emission reduction objective underlying the Package has been criticised by the civil society and some developing countries arguing that it is not ambitious enough for the EU to show international climate change leadership. After the 2009 UN Climate Change Conference in Copenhagen failed to bring conclusive results,[44] the EU has engaged in internal debates on whether it should raise its level of ambition and implement the 30% target. In May 2010, the Commission released a communication on possible new policies and measures that would need to be added to the Package for the EU to achieve the 30% target by 2020.[45] The Council was initially expected to make a decision on the 30% target by October 2010[46] but the decision was postponed due to lack of consensus.

While showing leadership in the international climate change negotiations has been a prominent driver for the adoption of the Package, it was not the only one. The Package responds to multiple concerns within the EU, from energy security[47] and long-term economic

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[39] Oberthür and Kelly, "EU leadership in international climate policy. Achievements and challenges", 43(3) *The International Spectator* (2008), 35-50, at 36-37.

[40] Council Decision 2002/358/EC concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the UNFCCC and the joint fulfilment of commitments thereunder, [2002] OJ L130, at 0001 – 0003.

[41] On the US announcement and the Protocol's birthing difficulties, see Kulovesi, "How to prevent babies from being thrown away with the bathwater: Perspectives on the international climate regime from Buenos Aires to the future" in Morgera and Francioni (Eds.), *The Future of Environmental Law: International and European Perspectives* (The Working Group on Environmental Law: Collected Reports 2004 – 2005), EUI Working Papers Law, Law No. 2006/01, 22-27, at 23.
<http://cadmus.eui.eu/dspace/bitstream/1814/4083/1/WPLAWNo.20061ELWG.pdf> accessed 8 Nov. 2010.

[42] Ellerman, Convery and de Perthuis, *Pricing Carbon. The European Union Emissions Trading Scheme* (Cambridge University Press, 2010), pp. 28, 18-19. Ellerman et al. explain that the Commission intended the EU ETS as a "domestic scheme" that would proceed independently of the Kyoto Protocol. However, the link between the Kyoto Protocol and the EU ETS assumed a central role after George W. Bush rejected the Protocol in Mar. 2001.

[43] Kulovesi, cited *supra* note 41, pp. 23-24.

[44] On the Copenhagen outcome, see, for example, "Summary of the Copenhagen Climate Change Conference", *The Earth Negotiations Bulletin* Vol.12, No. 459 (22 Dec. 2009); Rajamani, "Neither fish or fowl", *Seminar 606* (Feb. 2010), 2-29; Bodansky, "The Copenhagen Climate Change Conference: a post-mortem", 104(2) AJIL (2010), 230-240; Müller, "Copenhagen 2009, failure or final wake-up call for our leaders" (Oxford Institute for Energy Studies EV 49, Feb. 2010).

[45] Commission, "Analysis of options to move beyond 20% greenhouse gas emission reductions and assessing the risk of carbon leakage" (Communication) COM(2010) 265 final, 26 May 2010.

[46] Council (EU), "Council Conclusions on Climate Change" (3021st Environment Council Meeting, Luxembourg, 11 June 2010)
<http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/envir/115140.pdf> accessed 10 Nov. 2010.

[47] van Schaik, cited *supra* note 35, p. 264.

competitiveness, to trade and development cooperation.[48] The basic philosophy underlying the Package is that climate change objectives can be achieved while continuing to pursue economic prosperity and job-creation within the EU.[49] The Package seeks "to put Europe on the road to the future" and ensure that by the year 2050, Europe will look "very different" in terms of supplying its energy needs.[50] According to the Commission, therefore, the transition to a low-carbon future can be achieved while continuing to pursue economic growth: the Package represents an opportunity to "make climate-friendly policies a major driver for growth and jobs in Europe" and for Europe to show that "necessary change can go hand in hand with a competitive and prosperous economy fit for the 21st century."[51] Accordingly, the EU climate goals significantly shaped the recent "Europe 2020 Strategy" for smart, sustainable and inclusive growth.[52] Once again, this has important international dimensions that go beyond climate change negotiations, such as for example, the preparatory process for the 2012 UN Conference on Sustainable Development.[53]

2. UNPACKING THE PACKAGE

The very fact that the EU decided to adopt a 'package' of legislative measures that jointly address climate change and energy clearly shows the intention of adopting a comprehensive and highly integrated approach. In many respects the Package includes innovative legal measures that support not only climate change mainstreaming, but also the environmental sustainability of proposed climate change measures (internal environmental integration). In addition, the Package seeks to ensure its own effective 'normative integration'[54] into the crowded realm of existing EU environmental legislation, by explicitly clarifying linkages with other relevant EU legislation and building upon certain pre-existing climate and energy initiatives, modifying some and implicitly ensuring the continuance of others.

An understanding of the components of the Package is therefore necessary at this stage. First, it contains a revised EU ETS Directive,[55] extending and revising the emissions trading scheme from 2013 onwards. The EU ETS is the flagship of the EU's climate policy, capping greenhouse gas emissions from energy intensive industrial sectors, currently representing approximately 40% of the EU's total emissions. This is complemented by the Effort-sharing Decision, through which the Package introduces binding emission targets for each Member State to implement in sectors not included under the ETS. The Package further comprises a Directive on Carbon Capture and Storage (CCS),[56] which regulates the matter for the first time in the EU and provides incentives for pilot activities. The Package also includes a Directive on Renewable Energy (Renewables Directive) addressing jointly for the first time

[48] Ibid., p. 266.
[49] COM (2008) 30 final, cited *supra* note 19.
[50] Ibid.
[51] Ibid. p. 3.
[52] Commission, "Europe 2020: A strategy for smart, sustainable and inclusive growth" COM(2010) 2020 final, 3 Mar. 2010; and European Council Conclusions of 17 June 2010.
[53] UN General Assembly, "Implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development" (24 Dec. 2009), UN Doc. A/RES/64/236.
[54] This is a different concept than that of the requirement of environmental integration enshrined in Art. 11 TFEU. Normative integration simply refers to a legislative technique of ensuring clarity in the relationship between different relevant legal instruments. For an application in the area of EU water law, see Grimeaud, "The EC Water Framework Directive – an instrument for integrating water policy", 13(1) RECIEL (2004), 27-39.
[55] Directive 2003/87/EC, cited *supra* note 20, establishing a scheme for greenhouse gas emission allowance trading within the Community in 2003.
[56] CCS Directive, cited *supra* note 22.

all forms of renewable energy[57] and aiming to increase the share of renewable energy to 20% of the total and 10% of energy in the transportation sector.[58] [59].[60]The Renewables Directive also includes unprecedented sustainability criteria for the production of biofules, and is, in this respect, linked to another element of the Package, a revised directive setting environmental standards for fuel,[61] with a view to facilitating the more widespread blending of biofuels into petrol and diesel.

On energy efficiency, the Package includes a Regulation setting the first legally-binding fleet standards for CO2 emissions from new passenger cars, whereby Member States agreed to reduce greenhouse gas emissions from passenger cars and achieve average fleet emissions of 130 grams of carbon dioxide per kilometre in 2015.[62] It should be noted that the target to enhance energy efficiency by 20% by 2020 pre-dates the Package, and the basis for related measures can be found in the 2006 European Action Plan for Energy Efficiency.[63] Thus, while most energy efficiency measures are technically not part of the Package (and will not be addressed in this article), they are intrinsically linked to it. Overall, the Commission has estimated that the Action Plan for Energy Efficiency will lead to significant and cost-effective greenhouse gas emission reductions by 2020, thereby directly contributing to the objectives of the Package.[64] It should also be noted that the Package includes amended guidelines on state aid for environmental measures, which were adopted by the Commission in 2008.[65] While this article does not address the guidelines, they are certainly important in facilitating Member State action and make an interesting case study for analysing environmental integration in EU competition law. Turning now to the environmental

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[57] Renewables Directive, cited *supra* note 23.

[58] This target is often misrepresented as a 10% biofuel target. The confusion stems from the European Council of March 2007 endorsement of a mandatory minimum 10% target of biofuels in transport, see Council, "Presidency Conclusions" 7224/1/07 Rev 1, Annex I, para 7, 2 May 2007. However, during the formulation of the Package, that target became a 10% renewable energy in transport.

[59] Parliament and Councils Directive 2009/30/EC (23 April 2009) amending Directive 98/70/EC as regards to the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC, (Fuel Specification Directive). The Directive was initially proposed in January 2007, COM(2007) 18 final, 31 Jan. 2007.

[60] Vedder, cited *supra* note 8, at 5-6.

[61] Fuel Specification Directive, cited *supra* note 59.

[62] Parliament and Council Regulation (EC) 443/2009 (23 April 2009) setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO2 emissions from light-duty vehicles, (2009) OJ L140/1. It is interesting to note that earlier voluntary commitments by the industry failed to achieve the agreed targets. The final compromise adopted as a part of the Package provides, *inter alia*, for "volume phase-in," meaning that in 2012-2014, the target applies only to a proportion of the manufacturers' cars during the first year. It also provides for reduced excess emission premiums. There is also a long-term objective to reach 95 grams per kilometer by 2020, to be reviewed in 2013.

[63] COM(2006) 545 final, 19 Oct. 2006.

[64] In 2009-2010, measures were passed known as the "energy efficiency package," and included: Parliament and Council Regulation (EC) 1222/2009 (25 Nov. 2009) on the labeling of tires with respect to fuel efficiency and other essential parameters, [2009] OJ L342/46; Parliament and Council Directive 2010/31/EU (19 May 2010) on the energy performance of buildings [2010] OJ L153/13; and Parliament and Council Directive 2010/30/EU (19 May 2010) on the indication by labeling and standard product information of the consumption of energy and other resources by energy-related products, [2010] OJ L153/1.

[65] Oberthür and Pallemaerts, cited *supra* note 32, p. 47. Community guidelines on State aid for environmental protection (2008/C 82/01), [2008] OJ C82; See also "State aid: guidelines on state aid for the environment – frequently asked questions" (Press Release) MEMO/08/31 (23 Jan.2008) <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/31&format=HTML&aged=0&language=EN&guiLanguage=en> accessed 10 Nov. 2010.

integration and international dimensions of the key elements of the Package, the EU ETS Directive will be addressed first.

3. THE EU ETS

The EU ETS is the world's most important greenhouse gas emissions trading scheme.[66] It is a cap-and-trade scheme, covering more than 12,000 operators. By creating a price for greenhouse gas emissions, the EU ETS has attempted to integrate climate change considerations into the strategic thinking of the covered economic sectors and, at least in theory, created an incentive for business to start investing in low-carbon technologies.[67] Having internalized some climate change costs into sectors such as power generation, iron and steel, refineries, cement and other building materials, as well as pulp and paper,[68] the ETS can also be seen as a critical tool for implementing the external dimension of the environmental integration principle.[69] All this is in line with messages from the Fourth Assessment Report by the IPCC and the Stern Review of the Economics of Climate Change that introducing a price for greenhouse gas emissions is one of the most effective ways to mitigate climate change.[70] At the international level, the EU is hoping that the ETS will inspire other countries to establish similar schemes and to expand the global carbon market through interlinked emissions trading schemes, first within countries belonging to the Organization for Economic Cooperation and Development (OECD) and later including other major economies.[71] According to the Commission's vision, the OECD-wide market would be driven by a transatlantic carbon market, created by linking the EU ETS to a future greenhouse gas emissions trading scheme in the US.[72] This section begins with a brief overview of the ETS and the key reforms introduced by the Package. It then analyses the ETS in the international context, focusing on its relevance for the EU's climate change leadership and its relationship with international law, including the UNFCCC and the WTO.

A. Overview of the EU ETS

The ETS marked a U-turn in the EU's attitude towards carbon trading and market-based instruments. During the Kyoto Protocol negotiations, prior to 1997, the EU and developing countries opposed market-based mechanisms, which were favoured by the US and other

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[66] The EU ETS estimated value was €63 billion of the overall €86 billion value of the global carbon market in 2008. "Executive Summary" in Capoor and Ambrosi, "State and Trends of the Carbon Market 2009" (The World Bank, Washington D.C., May 2009), 1-2.

[67] A critical assessment maintains that in fact the EU ETS has locked-in current emissions and provided incentives for industries not to reduce (and even increase) their emissions. Sandbag, "Cap or trap? How the EU ETS risks locking-in carbon emissions", (September 2010) <http://www.sandbag.org.uk/reports/> accessed 8 Nov. 2010.

[68] From 2013, the ETS will also cover carbon dioxide, nitrous oxide and perfluorocarbons from the chemical and aluminium sectors. As it will be explained below, aviation emissions will also be included under the ETS from 2012 onwards.

[69] The directive lists all six greenhouse gas covered by the Kyoto Protocol in accordance in its Annex A. During the first two trading periods, it has focused on carbon dioxide. From 2013 onwards, the ETS will also cover carbon dioxide, nitrous oxide and perfluorocarbons from the chemical and aluminium sectors. Member States can also unilaterally include additional activities and gases, subject to approval by the Commission.

[70] "Summary for Policymakers" in Pachauri and Reisinger (Eds.), *Climate Change 2007. Synthesis Report. A Report by the Intergovernmental Panel on Climate Change* (CUP, 2007), p. 18; Stern, *The Economics of Climate Change. The Stern Review* (CUP, 2006), p. 349.

[71] Commission, "EU Action Against Climate Change. The EU Emissions Trading Scheme" (2008) <http://ec.europa.eu/environment/climat/pdf/brochures/ets_en.pdf> accessed 8 Nov. 2010.

[72] Delbek, "Environmental policy in times of economic crisis - the example of the EU ETS" (European Commission, Presentation at the Adam Smith Prize 2009, Rotes Rathaus, Berlin 29 May 2009) <http://ec.europa.eu/environment/climat/emission/pdf/speech_berlin_290509.pdf> accessed 8 Nov. 2010.

developed countries in the coalition known as the Umbrella Group.[73] As part of the final deal, carbon-trading was included in the Protocol under the so-called flexibility mechanisms: the Clean Development Mechanism (CDM), Joint Implementation (JI) and Emissions Trading. Following the adoption of the Protocol the EU debated about the pros and cons of emissions trading[74] and in 2000, the Commission's Green Paper already implied that a Community-wide emissions trading scheme would be established.[75]

The ETS applies to the 27 EU Member States, Norway, Liechtenstein and Iceland. Operators covered by the ETS must hold a permit to engage in activities covered by the Directive. A competent national authority issues the permit after it is satisfied that the operator is capable of monitoring and reporting its emissions.[76] Each year, operators must surrender allowances (EU Allowances, EUAs) corresponding to their monitored and verified greenhouse gas emissions during the previous year. Operators whose emissions are below their quota may sell their excess allowances. In contrast, operators whose emissions exceed their quota must purchase allowances to cover their excess emissions as failure to surrender allowances results in a penalty of €100 per EUA.[77] Each Member State has a national greenhouse gas registry, in other words, an electronic database where the creation, transfer and surrender of EUA are registered. There is also a central registry in Brussels, still known as the Community Independent Transaction Log (CITL).[78]

The first "learning-by-doing" Phase of the ETS ran from 2005 to 2007, with a focus on setting up the necessary institutions and procedures.[79] Phase II, 2008-2012, runs in parallel with the first commitment period under the Kyoto Protocol and plays an important role in ensuring that the EU and its Member States comply with the Kyoto target.[80] Phase III of the ETS - as amended through the Package - will take place between 2013 and 2020 regardless of developments at the international level.[81] In order to improve its cost-effectiveness, the ETS is linked to the two project-based flexibility mechanisms of the Kyoto Protocol, the CDM and JI.[82] This means that operators participating in the ETS may use credits from the CDM and JI

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[73] Lutken and Michaelowa, *Corporate Strategies and the Clean Development Mechanism. Developing Country Financing for Developed Country Commitments?* (Edward Elgar, 2008), pp. 4-8.

[74] Commission, "Preparing for implementation of the Kyoto Protocol" (Communication) COM(1999) 230 final, 19 May 1999 and "Emissions trading within the European Community" (Green Paper) COM(2000) 87 final, 8 Mar. 2000.

[75] Ellerman et al, see note 42 supra, p. 21.

[76] Permit conditions and procedures are coordinated with Directive 96/61/EC concerning Integrated Pollution Prevention and Control (IPPC) [1996] OJ L257.

[77] This penalty applies during the second trading period. During the first period, it was lower, € 40 per EUA. Each EUA corresponds to one ton of carbon dioxide equivalent. As the price of EUA in the first half of 2010 was in the 10-20€ range, there is a clear incentive for installations to purchase EUAs rather than face the penalty.

[78] The website of the CITL can be accessed at: <http://ec.europa.eu/environment/ets/> accessed 8 Nov. 2010.

[79] Some of the key challenges during the first trading period included the identification of covered installations, organizing public consultations and lack of verified emissions data, which resulted in over-allocation of allowances.

[80] For the second trading period, emissions in the EU ETS sector have been capped at around 6.5 % below their levels in 2005.

[81] Some of the main questions for international climate policy include the continuity of the Kyoto Protocol beyond its first commitment period in 2012 and the ways of engaging the US and major emitting developing countries, such as China, in climate change mitigation efforts. For an overview, see Kulovesi and Gutierrez, "Climate change negotiations update: Process and prospects for an agreed outcome in Copenhagen in December 2009", 18(3) *Review of European Community and International Environmental Law* (2009), 229-243.

[82] Given the uncertain fate of the Kyoto Protocol in 2003 when Directive 2003/87/EC (cited *supra* note 20) was adopted the link between the ETS and the Kyoto Mechanisms was done subsequently by Directive 2004/101/EC

to comply with their emissions allocations. The main motivation was to enable companies to take advantage of the cost-efficient mitigation opportunities in developing countries and countries in transition to a market economy.

In terms of external environmental integration, the amended Directive extends the sectors covered by the EU ETS, notably adding the chemical industry, and the aviation sector, as well as more activities under the previously included energy, metal, mineral and paper sectors.[83] Of particular interest is the decision to include in the ETS emissions from all flights taking off and landing in the EU from 2012 onwards.[84] This can be seen as a response to a long-standing impasse under the UNFCCC on whether and under which international forum to take action on emissions from international aviation and maritime transport (bunker fuels). For the purposes of our analysis, the EU unilateral action on aviation emissions illustrates how the environmental integration requirement links with the international relevance of the ETS: the EU is attempting to integrate climate change considerations into the aviation sector whose rapidly growing emissions could offset the impact of mitigation in other sectors.[85] At the same time, the EU is seeking to influence international behaviour in the aviation sector, and the fact that the scheme will apply to non-European airlines has been subject to protests and even legal action.[86] Overall, however, the ETS is often (but not universally) perceived as a success in that it has introduced a price for greenhouse gas emissions from energy intensive sectors in the EU, thereby sending a price signal for business to start investing in low-carbon technologies and mainstreaming climate change considerations into their strategies.[87]

B. The Package and Effectiveness of the ETS

Regardless of the dominant view of the ETS as an important example of the EU's global climate change leadership, the effectiveness of the Scheme has been subject to a debate,[88] which is relevant in assessing the extent to which environmental integration is actually

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amending Directive 2003/87/EC ("Linking Directive") [2004] OJ L338/18. The EU has adopted stricter requirements concerning certain CDM project types, for instance, it does not allow credits from sink projects and only accepts credits from small-scale hydro power projects. It does, however, accept industrial gases.

[83] For a detailed listing, see Annex I, Directive 2009/29/EC, cited *supra* note 20 above.

[84] Parliament and Council Directive 2008/101/EC (19 Nov. 2008) amending Directive 2003/87/EC, cited *supra* note 20, so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community, [2009] OJ L8/3.

[85] See also links with multilateral negotiations within the International Civil Aviation Organization in Vedder, cited *supra* note 8, at 7. Note that the 37th Session of the Assembly adopted a comprehensive resolution to reduce the impact of aviation emissions on climate change, ICAO, "ICAO Member States agree to historic agreement on aviation and climate change" (Press release, 8 Oct. 2010) <http://www2.icao.int/en/Assembly37newsroom-public/Documents/ICAO%20Member%20States%20Agree%20To%20Historic%20Agreement%20On%20Aviation%20And%20Climate%20Change.pdf> accessed 11 Nov. 2010.

[86] The International Air Transport Association (IATA) protested the EU's decision to include aviation emissions in the ETS in the middle of the global economic crisis. See IATA, "IATA blasts European Union ETS decision" (Press Release, No. 50, 24 Oct. 2008) <http://www.iata.org/pressroom/pr/Pages/2008-10-24-02.aspx> accessed 11 Nov. 2010. At the end of 2009, American Airlines, Continental Airlines and United Airlines backed by the US Airtransport Association, challenged the inclusion of non-European airlines in the ETS before British courts. See also Petersen, "The legality of the EU's stand-alone approach to the climate impact of aviation: the express role given to the ICAO by the Kyoto Protocol", 17(2) RECIEL (2008), 196-204.

[87] For an example of a largely positive evaluation, see Ellerman et al., cited *supra* note 42.

[88] For a recent critical assessment of the data concerning 2009 emissions, see Sandbag, "Rescuing the EU ETS from Redundancy" (Briefing Paper) < http://www.sandbag.org.uk/site_media/pdfs/reports/Rescuing_EU_ETS.pdf > accessed 8 Nov. 2010. The paper argues that after five years, the ETS has "failed to constrain the annual supply of carbon across capped sectors for any year except 2008," and given the significant drop in emissions in 2009 due to the recession, phase II of the ETS could "allow emissions to grow with no further need for domestic abatement until 2017 or later."

supported by this legal tool. One of the key debates has concerned the strictness of the emissions cap and the method of allocating EUAs to the participating installations. In theory, the two main choices for allocating allowances are so-called *grandfathering* (whereby allowances are distributed free of charge based on historical emissions) and *auctioning* (whereby participating installations are required to purchase the necessary allowances). During its first two phases, the ETS has mainly used grandfathering with the vast majority of EUAs allocated for free through National Allocation Plans (NAPs) drawn up by each Member State and notified to the Commission.[89] Essentially, the Member State decided the overall amount of allowances and the criteria for allocating them during each of the first two trading periods, with the Commission having the power to reject a NAP or a part of it. As the effectiveness and desirability of this method was subject to debate,[90] the method of allocating EUAs was one of the key reforms to the ETS brought about by the Package. National emissions caps determined by the Member States will be replaced by an EU-wide emissions cap defined in the Directive that decreases in a linear manner by a factor of 1.74%.[91] According to the Commission, this reform "provides a long-term perspective and increased predictability, which is required for long-term investments in efficient abatement."[92] Furthermore, auctioning will become the basic principle of allocation. According to the Commission's original proposal in January 2008, auctioning was to become the norm for the power sector from 2013 onwards,[93] but some limited exceptions were adopted as a last-minute compromise to ensure support for the Package by some of the new Member States.[94] For industrial installations, auctioning will be gradually increased during Phase III, starting at 30% in 2013, and reaching 70% in 2020 and 100% in 2027.[95]In those cases where allowances are not auctioned, they will be allocated based on harmonized rules.[96]

However, less than two years after the negotiations of the Package, the environmental effectiveness of the ETS is once again being debated.[97] Because of the global economic

[89] Around 95% of allowances were allocated free of charge during the first phase and around 90% during the second phase. According to Art. 9 of Directive 2003/87/EC, cited *supra* note 20, the Commission may reject the NAP or any aspect thereof on the basis that it is incompatible with the criteria specified in the Directive.

[90] On both occasions, the NAP process was also slow to administer. The fact that the allocations for the first trading period were not based on verified emissions also gave rise to problems. While the aim was to set the cap close to business-as-usual emissions during Phase I of the ETS, the price of EUAs eventually collapsed from its high at around € 30 close to zero as monitored data released in the spring of 2006 concerning the first year showed that that the cap was too lax and the actual emissions were lower than the allocations. Ellerman et al., cited *supra* note 42, pp. 36-37, p. 42. Ellerman et al. explain that "The problem was that no Member State government had a good idea of the exact emissions within the ETS sectors," at p. 37. During Phase II, the Commission took a stricter stance on the NAPs and verified emissions from 2005 were used as the baseline in setting the cap for 2008-2012, which is around 6.5% below 2005 emissions.

[91] Art. 9 of Directive 2009/29/EC, cited *supra* note 20. The linear factor was determined based on the EU's unilateral pledge to reduce emissions by 20% from 1990 levels by 2020 (i.e. by 14% from 2005 levels). The ETS sector will reduce emissions by 21% from 2005 levels by 2020, in other words, more than non-ETS sectors. The linear factor will continue beyond 2020 and it will be revised at the latest in 2025.

[92] Commission (EC) "Proposal for a Directive of the European Parliament and of the Council amending Directive 2008/87/EC so as to improve and extend the greenhouse gas emission allowance trading system of the Community" COM(2008) 16 final, 23 Jan. 2008, at 7. In 2010, the Commission is developing rules on how auctioning will work in practice, including the timing of the auctions, volume of allowances to be auctioned and so on.

[93] Ibid.

[94] Directive 2009/29/EC, cited *supra* note 20, preambular para 19 and Art. 10(c).

[95] Ibid., preambular para. 21. The Commission originally proposed to reach full auctioning in these sectors by 2020.

[96] Ibid., Art. 10(a).

[97] Another issue that could compromise the effectiveness of the EU ETS is the use of international offsets. For example, in 2009, while credits from international offsets accounted for only 4.3% of credits surrendered under

downturn, emissions in the sectors covered by the ETS have decreased more rapidly than expected - verified emissions under the ETS in 2009 were 11.6% below 2008 emissions and carbon prices fell correspondingly, with a drop in early 2009 from some €25 to €8 per EUA.[98] This has provoked criticism that the cap is too lax and that the ETS does not provide incentives for operators to make structural investments to reduce their emissions.[99] In May 2010, the Commission acknowledged that the economic analysis underlying the Package was no longer valid and suggested "recalibrating" the ETS by setting aside EUAs originally intended for auction.[100] It remains to be seen what course of action - if any - the Member States will choose to take in response to the Commission's proposals.[101][102] For present purposes, this seems to indicate that ensuring effective incorporation of climate change considerations into decision-making by the covered sectors (external environmental integration) can be a challenging task. In other words, during its first two trading periods, the ETS has struggled to set the cap at a level that would provide an effective price signal - first because of lack of reliable information on past emissions and then due to unforeseen impacts of the global economic downturn. This means that the effectiveness of the ETS during the third trading period is once again questionable.

C. International Dimensions of the ETS: Climate Finance, Carbon Leakage and Expanding the Global Carbon Market

One of the key issues in the negotiations under the UNFCCC relates to finance for mitigation and adaptation actions in developing countries,[103] which is also linked to questions of internal environmental integration. It has been estimated that such financing needs will amount to billions of euros per year by 2020.[104] In its proposal to amend the EU ETS and make auctioning the default method of allocation, the Commission suggested using a proportion of auctioning revenues:

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the ETS, the share of hydrofluorocabon (HFC)-related credits accounted for 59% of all CERs surrendered under the ETS. Elsworth and Worthington, "International Offsets and the EU 2009. An update on the usage of compliance offsets in the EU Emissions Trading Scheme" (Sandbag Climate Campaign Report, July 2009) <http://www.sandbag.org.uk/site_media/pdfs/reports/offset2009.pdf> accessed 11 Nov. 2010. HFC credits have been qualified as a "loophole" and "market distortion" to the CDM and carbon markets. See, "Kyoto Protocol 'loophole' has cost $6 billion" *Newscientist* (9 Feb. 2007) <http://www.newscientist.com/article/dn11155-kyoto-protocol-loophole-has-cost-6-billion.html> accessed 11 Nov. 2010 and Wara, "Is the global carbon market working?" 445 *Nature* (2007),595-596.

[98] Europa, "EU ETS: Emissions fall more than 11% in 2009" (Press Release) IP/10/576, 18 May 2010.

[99] Sandbag briefing paper, cited *supra* note 88.

[100] According to the Commission, the cost of complying with the -20% target is now estimated at €48 billion rather than the previously estimated "at least €70 billion." Commission Communication, cited *supra* note 45.

[101] In June 2010, the Council concluded that the Commission's communication covers a wide range of issues which need to be discussed in-depth in order to prepare the EU for the medium- and longer-term climate change challenges, and agreed to "to revert to these issues as soon as possible and in any case no later than at its October 2010 session." COEU, "Analysis of options to move beyond 20% greenhouse gas emission reductions and assessing the risk of carbon leakage" (Environment Council Conclusions, 14 Jun. 2010, 11028/10) <http://www.consilium.europa.eu/uedocs/cmsUpload/st11028.en10.pdf> accessed 8 Nov. 2010.

[102] European industry formally opposes the unilateral 30% target. ACEI, "Open Letter" (21 Jan. 2010) <http://www.euratex.org/system/files/attached-files/100121+ACE+Open+Letter.pdf> accessed 11 Nov. 2010.

[103] For the main outstanding points in the climate change negotiations, see, for instance, Jinnah, Bushey, Muñoz and Kulovesi,., "Tripping points: barriers and bargaining chips on the road to Copenhagen", 4(3) *Environmental Research Letters* (5 Aug. 2009), <http://iopscience.iop.org/1748-9326/4/3/034003/pdf/1748-9326_4_3_034003.pdf> accessed 8 Nov. 2010 and Kulovesi and Gutierrez, see note 81 supra.

[104] For updated estimates, see UNFCCC Secretariat, "Investment and Financial Flows to Address Climate Change – Update" (Mar. 2009).

> … to reduce greenhouse gas emissions, to adapt to the impacts of climate change, to fund research and development for reducing emissions and adapting, to develop renewable energies to meet the EU's commitment to using 20% renewable energies by 2020, for the capture and geological storage of greenhouse gases, to contribute to the Global Energy Efficiency and Renewable Energy Fund, for measures to avoid deforestation and facilitate adaptation in developing countries, and for addressing social aspects such as possible increases in electricity prices in lower and middle incomes.[105]

The Commission originally proposed that "at least 20%" of the revenues generated from the auctioning of allowances under the ETS *should* be used for activities related to climate change mitigation and adaptation.[106] The final version refers to "at least 50%" of the auctioning revenues or "the equivalent value of these revenues," leaving the Member States discretion to decide how to spend the auctioning revenues.[107] Additions and specifications were also made to the list of possible activities, including references to the Kyoto Protocol Adaptation Fund, technology transfer, as well as afforestation and reforestation activities in developing countries. The chosen approach arguably reflects internal environmental integration to the extent that auctioning revenues generated under the ETS will be used to pursue a holistic approach to climate change mitigation and adaptation, by funding activities to avoid or mitigate adverse environmental impacts on biodiversity from CCS and deforestation, or to promote ecosystem-based adaptation. The overall idea of using climate financing for an integrated implementation of different multilateral environmental agreements (MEAs) is put forward by the EU also in international fora: for instance, the EU argues that climate financing should be used to achieve both climate change and biodiversity objectives.[108]

Considering the international dimension of the climate finance provisions in the ETS, it can be asked whether they are ambitious enough for the EU to assert global leadership in this area. Within the EU, the question of finance was subject to an internal debate throughout 2009. The lack of decisive position in the negotiations leading up to Copenhagen provoked criticism especially from civil society and the EU was accused of "putting a global climate deal at risk and threatening the lives of millions of the world's poorest."[109] In the autumn 2009, the Commission published a blueprint for climate finance, estimating that "finance requirements for adaptation and mitigation in developing countries could reach roughly €100 billion a year by 2020."[110] This would mean "international public funding in the range of €22

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[105] COM(2008) 16 final, cited *supra* note 92, Art. 10(3), at 22-23.
[106] Ibid.
[107] Directive 2009/29/EC, cited *supra* note 20, Art. 10.3.
[108] COEU, "EU and global vision and targets and international ABS regime", (Environment Council Conclusions, 16 Mar. 2010) <http://register.consilium.europa.eu/pdf/en/10/st07/st07536.en10.pdf> accessed 8 Nov. 2010, para 19, indicating that "public and private finance, including innovative forms of financing, and finance associated with the Copenhagen Accord on climate change, should - based on appropriate criteria - include scope for payments for ecosystem services, where appropriate, including for both adaptation and mitigation, and should specifically support conservation and sustainable use of biodiversity within REDD-plus, as appropriate, through the implementation of negotiated safeguards."
[109] Oxfam, "EU climate approach puts world's poorest people at peril" (Press Release, 2 March 2009) <http://www.oxfam.org/en/pressroom/pressrelease/2009-03-02/eu-climate-approach-puts-worlds-poorest-at-peril> accessed 8 Nov. 2010.
[110] Commission, "Stepping up international climate finance: A European blueprint for the Copenhagen deal" (Communication) COM(2009) 475/3, X 2009. The Commission further specified that domestic private and public finance could deliver between 20-40%, the carbon market up to around 40%, and international public finance could contribute to cover the remainder.

to 50 billion per year in 2020," of which the EU's share would be approximately between 10-30%.[111] On meeting this funding requirement through auctioning revenues from the ETS, the Commission estimates:

> Whilst it is difficult to be precise about the future carbon price and therefore the size of auctioning revenues, it is estimated that if the EU was required to finance €3 billion in 2013 – the upper end of the scale – this would account for between 7 and 20% of total auction revenues. It would therefore be well covered by the revenues flowing into government treasuries from climate change policies.[112]

In November 2009, the Council agreed to endorse these Commission's financing estimates but without specifying the EU's share.[113] In Copenhagen, the EU pledged €7.2 billion of fast-track financing for a three-year period in 2010-2012 and is currently negotiating with recipient countries on how to implement this.[114] Negotiations on the long-term financing framework under the UNFCCC are continuing with the UN Secretary-General's High-level Advisory Group on Climate Change Financing[115] being in the process of identifying possible funding sources. Overall, while the EU has attempted to play a constructive role concerning climate finance, divides persist between the EU and other developed countries on one side, and developing countries on the other, concerning the role of public financing in addressing climate change.[116]

D. Carbon Leakage

Another key international issue concerning the ETS in the Package relates to carbon leakage. Carbon leakage refers to a situation where mitigation policies affecting one economic sector or country may lead to growth of emissions in other sectors or countries. As explained above, the EU took a decision to launch the ETS and introduce a price for carbon dioxide emissions during one of 'the darkest moments' of international climate policy. This gave rise to concerns over competitiveness of the European industries: the UNFCCC and the Kyoto Protocol are based on the principle of common but differentiated responsibilities, and at present, non-Annex I countries, including China, India, Brazil, South Africa and other emerging economies, are not required to control the growth of their greenhouse gas emissions. Furthermore, the US never ratified the Kyoto Protocol and does not intend to do so.[117] This means that emitting greenhouse gases has no monetary cost outside the EU. Addressing concerns over competitiveness and introducing measures aimed at preventing

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[111] Ibid.
[112] Ibid.
[113] Council, "Presidency Conclusions" 15265/1/09 Rev 1, 1 Dec. 2009.
[114] This is in line with the (unadopted) Copenhagen Accord, which included agreement by developed countries to provide "new and additional resources, including forestry and investments through international institutions, approaching USD 30 billion for the period 2010-2012." Agreement was also reached that "in the context of meaningful mitigation actions and transparency on implementation, developed countries commit to a goal of mobilising jointly USD 100 billion dollars a year by 2020 to address the needs of developing countries." For text of the Copenhagen Accord, see UNFCCC, (30 Mar. 2010) UN Doc FCCC/CP/2009/11/Add.1, annex to Decision 2/CP.15.
[115] For information on the Group's work, see: <http://www.un.org/wcm/content/site/climatechange/pages/financeadvisorygroup>.
[116] "Summary of the Tianjin climate change talks" *The Earth Negotiations Bulletin*, Vol. 12, No. 485 (12 Oct. 2010) <http://www.iisd.ca/vol12/enb12485e.html> accessed 8 Nov. 2010.
[117] For a recent statement by the US under the UNFCCC that it "is not party to the Kyoto Protocol and does not intend to become such," see *The Earth Negotiations Bulletin*, Vol. 12, No. 466 (5 Jun. 2010) <http://www.iisd.ca/vol12/enb12466e.html> accessed 8 Nov. 2010.

carbon leakage formed therefore an important part of the Climate and Energy Package. According to the Commission:

> In the event that other developed countries and other major emitters of greenhouse gases do not participate in an international agreement that will achieve the objective of limiting global temperature increase to 2°C, certain energy-intensive sectors and sub-sectors in the Community subject to international competition could be exposed to the risk of carbon leakage. This could undermine the environmental integrity and benefit of actions by the Community.[118]

In 2009, the Commission determined sectors exposed to carbon leakage based on the criteria listed in the ETS Directive adopted as a part of the Package.[119]

The key to preventing carbon leakage in the Package is that sectors exposed to carbon leakage will continue to receive 100% of their allowances free of charge. In its proposal, the Commission also mentioned the possibility of establishing "an effective carbon equalisation system" with the view of putting EU installations on a comparable footing with those from third countries.[120] The system would essentially mean requiring those importing energy-intensive products to the EU to purchase allowances corresponding to their greenhouse gas emissions during the manufacturing of the product. Final decision on the possible further measures to address carbon leakage was postponed pending the outcome of the UN Climate Change Conference in Copenhagen in December 2009.[121] The Directive requested the Commission to review the situation in light of the outcome of the international negotiations, prepare a report by June 2010 and make "appropriate proposals," such as "inclusion in the Community scheme of importers of products" in sectors that are exposed to a significant risk of carbon leakage.[122] This proposal has provoked criticism with concerns having been raised over its compatibility with WTO law[123] and with the principle of common but differentiated responsibilities under the UNFCCC.[124]

In its report in May 2010, the Commission noted that given the uncertainties surrounding international climate policy,[125] the measures already included in the Package to address carbon leakage - free allowances and access to international offsets - remain justified.[126] The

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[118] COM(2008) 16, cited *supra* note 92.

[119] Commission Decision of 24 Dec. 2009 determining, pursuant to Directive 2003/87/EC, cited *supra* note 20, a list of sectors and subsectors which are deemed to be exposed to a significant risk of carbon leakage, [2010] OJ L1, at 10–18.

[120] COM(2008) 16, cited *supra* note 92.

[121] It was agreed that the Commission should review the situation with respect to carbon leakage by 30 Jun. 2010. See preambular para 26 and Art.10(b) of Directive 2009/29/EC, cited *supra* note 20. On the inconclusive outcome of the Copenhagen Conference, cited *supra* note 44.

[122] Art.10(b) of Directive 2009/29/EC.

[123] Dhar and Das, "The European Union's proposed carbon equalization system: Can it be WTO Compatible?" (Research and Information System for Developing Countries Discussion Paper # 156, 25 Nov. 2009) <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1513231> accessed 8 Nov. 2010.

[124] Ibid., 51, where Dhar and Das argue that in light of the principle of common but differentiated responsibilities, developing countries should not be expected to carry out similar actions as are taken by developed countries like the EU.

[125] On the hurdles in Copenhagen, see "Summary and Analysis" *Earth Negotiations Bulletin*, cited *supra* note 44.

[126] COM(2010) 265 final, cited *supra* note 45. In case the EU decides to step up its efforts and implement the -30% target, the Commission identifies the maintenance of free allocation of allowances to exposed sector as "the most obvious way to provide further help.

Commission also addressed the possibility of including imports into the ETS, noting that similar proposals have been discussed in the US and that "obviously it would be desirable for such initiatives to be taken together with such partners."[127] The Commission highlights, however, concerns voiced by emerging economies over such plans and draws attention to "broader issues about the EU's trade policy and its overall interest in an open trade system."[128] The Commission also acknowledges problems concerning the principle of common but differentiated responsibilities under the UNFCCC if developed and developing countries are treated in the same way in terms of climate change mitigation.[129] The Commission stresses the need to design such measures carefully in order to ensure their compatibility with WTO law and also draws attention to potential administrative difficulties arguing that "it would seem challenging to verify the performance of individual installations in third countries without a highly sophisticated monitoring and reporting system in place at installation level."[130] As an alternative, the Commission raises the possibility of "a more targeted approach to the nature and recognition of international credits in the ETS," mentioning a possible pilot for EU/China sectoral crediting on steel and highlights technology transfer as another means of helping emerging economies to close a competitive gap.[131]

The discussion on carbon leakage illustrates the prominent international dimension of the Package. The Commission is acutely aware of the close link between the carbon leakage provisions in the revised EU ETS Directive and the WTO regime, and the potential challenges that could follow from a decision to include some energy-intensive imported products under the ETS.[132] The principle of common but differentiated responsibilities and respective capabilities under the UNFCCC also plays a role in designing the EU's legislation on carbon leakage and the Commission highlights the need to consider, in particular, the situation of Least Developed Countries.[133] From the point of view of legislative technique, it is certainly interesting - even unusual - that a close and explicit connection is made between the outcome of international negotiations and possible changes to domestic legislation. In other words, possible further action on carbon leakage is explicitly linked in the operative text of the Directive to the outcome of negotiations on the future climate regime under the UNFCCC.[134] From a broader perspective, the interplay between European law and international law concerning carbon leakage could also be seen as supporting the argument made elsewhere that climate change law is emerging as a new legal discipline blurring the distinctions between international, regional and domestic law.[135]

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[127] Ibid., at 12.
[128] Ibid.
[129] Ibid.
[130] Ibid.
[131] Ibid.
[132] Ibid., at 12. See also COM(2008) 16, cited *supra* note 92, at 8.
[133] COM(2008) 16, cited *supra* note 20, at 8.
[134] See Directive 2009/29/EC, cited *supra* note 20, Art. 28(1), according to which, three months upon the approval of a future international climate change agreement leading to the EU undertaking mandatory emission reductions exceeding 20% from 1990 levels by 2020, the Commission must report and assess the agreement, focusing on elements specified in the Directive. Art. 28(2) of the Directive further provides that based on this report, the Commission must submit a legislative proposal to amend the ETS with a view to the emission reduction commitments to be implemented under the international agreement. This reflects the fact that in its current form, the Package is designed to implement the EU's unilateral -20% target and not the -30% target that the EU has promised to implement in the context of an international agreement.
[135] See Kulovesi, see note 1 supra.

E. Linking Emission Trading Schemes

The international dimensions of the ETS are not limited to climate finance and carbon leakage. As discussed above, the decision to adopt the ETS was linked to the EU's desire to play a global leadership role in the battle against climate change and the ETS is seen "an important building block for the development of a global network of emission trading systems."[136] In other words, the EU is hoping that the ETS will help to expand the global carbon market through interlinked emissions trading schemes, first within countries belonging to the OECD and later including other major economies.[137] Interestingly, the EU effort to support the creation of a global carbon market is also featuring more and more prominently in the EU bilateral external relations.[138] The Package introduced some reforms to facilitate the EU's ambition to expand the global carbon market.

In its original form, the ETS Directive allowed for linking the ETS with schemes in other industrialised countries having ratified the Kyoto Protocol.[139] Due to the fact that the US will not ratify the Kyoto Protocol,[140] new provisions were added to the ETS Directive, making it possible to recognise allowances from "compatible" and "mandatory" emissions trading schemes with absolute emission caps in "any other country" or "sub-federal or regional entities"[141] The language is such that it would enable linking the ETS with either a federal or regional emissions trading scheme in the US. From the US domestic perspective, both alternatives remain open.[142] From a global perspective, a link between the ETS and a federal emissions trading scheme in the US would have important implications: not only would it be "a strong political signal for the creation of a global carbon market, but would eliminate competitive concerns between these two players caused by different carbon prices."[143] The scheme would also provide "the backbone for the overall international climate regime, with subsequent enlargements to other developed and developing countries."[144] Also other OECD countries, such as Australia, New Zealand and Japan are considering or have already launched national greenhouse gas emissions trading schemes. For this reason, the new provisions in the ETS Directive concerning links with other greenhouse gas emissions trading schemes highlight the international dimension and relevance of the Package.

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[136] Europa, "Questions and Answers on the revised EU Emissions Trading System" (Press Release) Memo/08/796 (17 Dec. 2008).
[137] "EU Action Against Climate Change…", cited *supra* note 71.
[138] For instance, according to the Joint Statement resulting from the Fifth Summit between the EU and the Republic of Korea, "EU-Republic of Korea, Joint Press Statement" (Brussels, 6 Oct. 2010), leaders noted that the EU's emissions trading scheme experience is a useful example in strengthening global carbon market mechanisms <http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/er/116900.pdf> accessed 10 Nov. 2010.
[139] Directive 2003/87/EC, cited *supra* note 20, Art. 25, providing that "Agreements should be concluded with third countries listed in Annex B to the Kyoto Protocol which have ratified the Protocol to provide for the mutual recognition of allowances between the Community scheme and other greenhouse gas emissions trading schemes in accordance with the rules set out in Art. 300 of the Treaty."
[140] See *The Earth Negotiations Bulletin*, cited *supra* note 117.
[141] Article 25 paragraph 1a of Directive 2009/29/EC.
[142] Although plans to establish a federal cap-and-trade scheme have been frozen at least until 2013. See, Gerrad, "Climate regulation without congressional action", *New York Law Journal* (New York 6 Oct. 2010) 244(68) <http://www.law.com/jsp/nylj/PubArticleNY.jsp?id=1202472923986> accessed 9 Nov. 2010.
[143] Abstract in Strek, Mehling and Turek, "Prospects of Linking EU and US Emission Trading Schemes: Comparing the Western Climate Initiative, the Waxman-Markey and Lieberman-Warner Proposals" (Climate Strategies, April 2009) <http://www.climatestrategies.org/component/reports/category/33/143.html> accessed 9 Nov. 2010.
[144] Ibid.

4. THE EFFORT-SHARING DECISION

As mentioned above, the ETS Directive is complemented by the Effort-sharing Decision,[145] which is also significant both from an internal and external environmental integration perspective. For sectors not covered by the ETS and representing approximately 60% of the EU's greenhouse gas emissions, the Effort-Sharing Decision introduces a national emission target for each Member State during the period 2013-2020. In average, the reduction in the sectors covered by the Effort Sharing Decision will be 10% from 2005 levels by 2020 (see Figure 1). According to the Decision, the national target for each Member State was determined through a process seeking to reflect fairness, with targets set as a function of the per capita Gross Domestic Product (GDP): countries with high GDP per capita are required to reduce their emissions, while those with lower GDP per capita are allowed increasing them.[146] The targets adopted as a part of the Package were the same as those initially proposed by the Commission. Instead, what were modified during the political negotiations leading to the adoption of the Package were the rules applicable to meeting the targets.

The Decision applies to sectors such as transport, heating in buildings and waste. Emissions in these sectors tend to be diffuse and have important differences in mitigation potentials, which is why Member States may use their discretion as to where to concentrate their efforts. It is useful to note that emissions from land use, land-use change and forestry (LULUCF) are not included in the Package but the Commission was supposed to propose their inclusion once the international LULUCF rules have been agreed – alternatively, as currently looks likely, the Member States may specify their intentions regarding LULUCF if there is no international agreement by the end of 2010.[147] In practice, the LULUCF sector is important as it accounted for some 8% of the EU's total emissions in 2008.[148] In September 2010, the Commission launched public consultations on whether LULUCF should be included in the EU's 20%, or 30%, target.[149]

Table 1: The Package by the numbers

MEMBER STATE		Renewable Energy Share 2005*	Renewable Energy Target 2020**	2020 GHG Emission Targets^{+} (non-ETS^{++})	2020 GHG Emission Targets^{+} non-ETS^{++} ($tCO_{2\text{-eq}}$)	Kyoto Protocol Targets§	EU-15 'bubble' Kyoto targets§§
BE	Belgium	22%	13%	–15 %	70.954.356	92%	925%
BG	Bulgaria	94%	16%	20%	35.161.279	92%	
CZ	Czech Republic	61%	13%	9%	68.739.717	92%	

[145] Decision 406/2009/EC, cited *supra* note 21.
[146] Ibid., preambular para 8 . See also Commission, "Proposal for a decision of the European Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020" COM(2008) 17 final, 23 Jan. 2008.
[147] Ibid., Art. 8.6. Art. 9 on the Effort-Sharing Decision, cited *supra* note 21, contains provisions on the treatment of LULUCF emissions in the event that there is no international agreement by 31 Dec. 2010.
[148] Directorate-General for Climate Action (DG Clima), Brussels, 10 Sept. 2010. Public consultation on the role of EU agriculture and forestry in achieving the EU's climate change commitments. Background note for public consultation <http://ec.europa.eu/clima/consultations/0003/background_climate.pdf> accessed 11 Nov. 2010.
[149] Ibid.

DK	Denmark	170%	30%	–20 %	29.868.050	92%	79%
DE	Germany	58%	18%	–14 %	438.917.769	92%	79%
EE	Estonia	180%	25%	11%	8.886.125	92%	
IE	Ireland	31%	16%	–20 %	37.916.451	92%	113%
EL	Greece	69%	18%	–4 %	64.052.250	92%	125%
ES	Spain	87%	20%	–10 %	219.018.864	92	115%
FR	France	103%	23%	–14 %	354.448.112	92%	100%
IT	Italy	52%	17%	–13 %	305.319.498	92%	935%
CY	Cyprus	29%	13%	–5 %	4.633.210	n/a	
LV	Latvia	326%	40%	17%	9.386.920	92%	
LT	Lithuania	150%	23%	15%	18.429.024	92%	
LU	Luxembourg	9%	11%	-20%	8.522.041	92%	72%
HU	Hungary	43%	13%	10%	58.024.562	94%	
MT	Malta	0%	10%	5%	1.532.621	n/a	
NL	Netherlands	24%	14%	–16 %	107.302.767	92%	94%
AT	Austria	233%	34%	–16 %	49.842.602	92%	87%
PL	Poland	72%	15%	14%	216.592.037	94%	
PT	Portugal	205%	31%	1%	48.417.146	92%	127%
RO	Romania	178%	24%	19%	98.477.458	92%	
SI	Slovenia	160%	25%	4%	12.135.860	92%	
SK	Slovakia	67%	14%	13%	23.553.300	92%	
FI	Finland	285%	38%	–16 %	29.742.510	92%	100%
SE	Sweden	398%	49%	–17 %	37.266.379	92%	104%
UK	United Kingdom	13%	15%	–16 %	310.387.829	92%	87.5%

* Share of energy from renewable sources in gross final consumption of energy, 2005, from Annex I, Directive 2009/28/EC.

** Target for share of energy from renewable sources in gross final consumption of energy, 2020, from Annex I, Directive 2009/28/EC.

$^{+}$ Relative to 2005. Member State limits in 2020 for greenhouse gas emissions from sources not covered under the ETS Directive compared to 2005 greenhouse gas emissions levels. From Annex COM(2008) 17 final.

++ The EU ETS cap for 2013 has been determined at 1,926,876,368 allowances, and will annually decrease by 35.374.181. The 2012 cap, however, is subject to adjustments.

§§ Relative to 1990, from Kyoto Protocol.

§§§ Relative to 1990, from Council Decision 2002/358/EC, 25 April 2002.

Under the Effort-sharing Decision, each Member State must implement its binding annual target.[150] The target is subject to strict reporting and compliance checks.[151] Member States that are in non-compliance will be subject to coercive action.[152] It is also possible for Member States to transfer emission rights among themselves[153] or to implement EU-wide projects.[154]

Vedder identifies two international elements in the Effort-sharing Decision: first, as in the case of the EU ETS, there is explicit provision for adjustments depending on the evolution of the international climate change legal framework; second, Member States are called upon to ensure that purchase of credits enhance the equitable geographic distribution of CDM projects and achievement of an international agreement on climate change.[155] This international dimension relates to the possibility to use carbon credits generated by the CDM for which the Effort-sharing Decision contains detailed rules.[156] This possibility also ties in with EU bilateral external efforts to support the CDM in third countries.[157] Indeed, the preamble of the Effort-Sharing Decision provides that the Member State should be able to use additional credits resulting from agreements concluded between the EU and third countries. The interplay between EU domestic law and international action, at the multilateral and bilateral level, is also visible in the CCS Directive, which is discussed next.

5. CARBON CAPTURE AND STORAGE

A new legal initiative included in the Package, the CCS Directive presents interesting international dimensions, particularly with reference to internal environmental integration. The latter point is clearly reflected in the purpose of the Directive, which is to establish a "legal framework for the environmentally safe geological storage of carbon dioxide to contribute to the fight against climate change" and to "eliminate as far as possible negative effects and any risk to the environment and human health."[158] The CCS Directive is the world's first example of legislation dedicated to this issue.[159]

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[150] Ibid., Art. 3 . Essentially, the targets are a linear reduction path. The starting point is based on average emissions in 2008-2010 and the end point is in 2020. According to Art. 3.3, banking is possible and a Member State may carry forward from the following year a quantity of up to 5 % of its annual emission allocation.
[151] Ibid., Art. 6 and 7.
[152] Ibid., Art. 7. .
[153] Ibid., Art. 3.4, according to which a Member State may also transfer up to 5 % of its annual emission allocation to other Member States.
[154] Ibid., Art. 5.7, according to which Member States may use credits from Community-level projects issued pursuant to Art. 24a of Directive 2003/87/EC towards their emission reduction commitments, without any quantitative limit.
[155] Vedder, see note 8 supra, at 6, referring respectively to Art. 5(1), 8 and 9 of the Effort-sharing Decision, cited *supra* note 21. In this regard, the Effort Sharing Decision limits the *annual* use of credits to 3% of the Member State's greenhouse gas emissions in 2005, plus a possible additional share of its 3% annual quantity transferred by another Member State. See Art. 5.4 and 5.6 of the Effort-Sharing Decision, cited *supra* note 21. Article 5.5 contains rather complex criteria according to which certain Member States may use additional credits amounting to 1% of their 2005 emissions.
[156] Ibid., Art. 5.
[157] Certain bilateral Association or Partnership and Cooperation Agreements between the EU and third countries contain explicit reference to cooperation related to the CDM (see, for instance, Political Dialogue and Cooperation Agreement with Central America, Art. 25 < http://www.eeas.europa.eu/ca/pol/pdca_12_03_en.pdf> accessed 11 Nov. 2010).
[158] Art. 1 of Directive 2009/31/EC, cited *supra* note 22.
[159] Kelly, Oberthür and Pallemaerts, see note 32 supra, p. 19. There, is however, proposed CCS legislation in the US Senate: S:\WPSHR\LEGCNSL\XYWRITE\SCI10\CCS1.X9, see "Rockefeller, Voinovich introduce carbon

According to the IPCC, carbon dioxide capture and storage is "a process consisting of the separation of CO2 from industrial and energy-related sources, transport to a storage location and long-term isolation from the atmosphere."[160] Many argue that CCS holds great promise in the fight against climate change: if successful, CCS would decouple CO_2 emissions from the use of fossil fuels, effectively decarbonising the energy sector. CCS, however, is a non-demonstrated technology with several question marks surrounding it. As the Directive acknowledges:

> Each of the different components of CCS, namely capture, transport and storage of CO2, has been the object of pilot projects on a smaller scale than that required for their industrial application. These components still need to be integrated into a complete CCS process, technological costs need to be reduced and more and better scientific knowledge has to be gathered. It is therefore important that Community efforts on CCS demonstration within an integrated policy framework start as soon as possible."[161]

The rationale for the EU legislative initiative on CCS therefore lies both in the recognition that global greenhouse gas emissions could not be reduced by 50% by 2050 in a cost-efficient manner without CCS, and concerns related to the environmental sustainability of the technology.[162] The Commission in fact identified in its impact assessment the risk that carbon dioxide captures and stored does not remain isolated from the atmosphere and biosphere, concluding that land take associated with CCS deployment would be relatively small, and that major impacts on biodiversity would result from land fragmentation.[163] Nonetheless, CCS technology is associated with safety and environmental risks, including leakage, transport and sudden release of CO2, which in large quantities could be lethal. Like other large industrial installations, there are issues with storage sites, licensing, and public acceptance.[164] In addition, permanence is an important concern related to CCS, in other words, whether it will be possible ensure that the CO2 stored does not find its way back to the atmosphere. Because CO2 is stored for the longer-range future, it also has long-term implications, including those of inter-generational equity.[165] Others stem from legal and emissions liabilities in case of

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capture and storage development act of 2010" (14 Jul. 2010) <http://rockefeller.senate.gov/press/record.cfm?id=326356> accessed 9 Nov. 2010.

[160] IPCC, "Special Report on Carbon Capture and Storage, Summary for Policy Makers" (Report of Working Group III of the Intergovernmental Panel on Climate Change, Montreal, 22-24 Sept. 2005), at 3 < http://www.ipcc.ch/pdf/special-reports/srccs/srccs_summaryforpolicymakers.pdf> accessed 11 Nov. 2010. The technical options for storage include geological (underground and under the seabed) and dissolved in the water column. This latest option is generally rejected due to to the large uncertainties regarding permanence and environmental impact.

[161] CCS Directive, cited *supra* note 22, at (11)

[162] Commission, "Summary impact assessment: Commission staff working document accompanying the proposal for a directive on the geological storage of carbon dioxide" SEC(2008) 55, COM(2008) XXX final, 23 Jan. 2008 (hereinafter, CCS summary impact assessment), para 10, where it is stated that "without CCS the cost of meeting a reduction in the region of 30% in 2030 in the EU could be up to 40% higher than with CCS."

[163] Ibid., paras 2 and 13.

[164] Stakeholders' concerns regard the possible diversion of efforts from energy efficiency and renewables, security of storage and unpredictable implications for the energy mix, see CCS proposal, cited *supra* note 19, at 3.

[165] Roggenkamp and Woerdman, "Looking beyond the legal uncertainties of CCS" in Roggenkamp and Woerdman (Eds.), *Legal Design of Carbon Capture and Storage – Developments in the Netherlands, from an International and EU Perspective* (Intersentia, 2009), pp. 347-360, pp. 347, 350.

carbon release.[166] For these reasons, Member States have discretion in determining whether to make available sites for storage and to identify such sites, as well as to determine the conditions for site use. [167]

Besides creating an enabling legal framework, the Package also seeks to provide economic incentives and encourage the setting up of network of demonstration plants not only across Europe but also in key third countries,[168] thus also embodying a bilateral external dimension. Of particular relevance is a provision of the ETS Directive for setting aside up to 300 million EUAs supporting up to 12 CCS demonstration projects. [169] At current EUA prices in the € 15 range, [170] this is a EU "subsidy" of about €4500 million, or € 375 million per demonstration project. In addition, the new guidelines on State Aid for environmental protection, [171] combined with the existence of the CCS Directive, facilitate Member State support for the demonstration projects. In particular, the guidelines state that "the means to support [CCS] (…) could constitute state aid (…) but it is too early to lay down guidelines relating to the authorisation of any such aid. (…) the Commission will have a generally positive attitude towards State aid for such projects."[172]

In addition to being very costly, CCS demonstration projects face many hurdles, including technical, legal, safety and environmental considerations. Proponents of CCS have attempted for several years to have the technology, or at least pilot projects, included under the CDM, [173] in order to secure the necessary financial political support to carry out those projects. Those attempts have not been successful so far[174] and, at most, the Parties to the Kyoto Protocol have recognized that CCS is a 'possible mitigation technology' that raises concerns related to outstanding issues related to, *inter alia*, non-permanence and environmental impacts.[175] .[176]Some of the criticism to inclusion of CCS under the CDM has also been based on moral grounds, namely that developing countries should not be used as testing grounds for unproven technology. Pressure on the EU to legislate on CCS thus originated from various sources: part the lack of progress under the UNFCCC; in part the need to show global

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[166] Chiavari, "The legal framework for carbon capture and storage in the EU (Directive 2009/31/EC)" in Oberthür and Pallemaerts (Eds.), *The New Climate Policies of the European Union* (VUB Press, 2010), pp. 151-177, p. 153.

[167] CCS proposal, cited *supra* note 19, at 3 and 8. CCS Directive, cited *supra* note 22, at Art. 4(1) which reads as follows: "Member States shall retain the right to determine the areas from which storage sites may be selected pursuant to the requirements of this Directive. This includes the right of Member States not to allow for any storage in parts or in the whole of their territory."

[168] Chiavari, cited *supra* note 166, p. 159.

[169] CCS Directive, art. 10a 8. Skjaerseth and Wettestad, cited *supra* note 32, p. 76

[170] Pointcarbon, www.pointcarbon.com, accessed 12 November 2010.

[171] Commission, "Community Guidelines on State aid for environmental protection" (Notice) 2008/C 82/01, [2008] OJ C82/1.

[172] Ibid., preambular para 69.

[173] See for example Decision 1/CMP.2 at 18-25 in UNFCC, Report of the Conference of the Parties… (2 Mar. 2007) UN Doc FCCC/KP/CMP/2006/10/Add.1 or "Bonn outcomes and prospects for Cancún" *Earth Negotiations Bulletin* Vol. 12, No. 318, at 12.

[174] Negotiations continue, see for instance UNFCCC, Annual Report of the Executive Board of the clean development mechanism to the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, (4 Nov. 2009) UN Doc. FCCC/KP/CMP/2009/16. See UNFCCC, Views related to carbon dioxide capture and storage in geological formations as a possible mitigation technology, Submission from Parties (13 April 2010) UN Doc FCCC/SBSTA/2010/MISC.2 and UNFCCC, Submission from parties (31 May 2010) UN Doc FCCC/SBSTA/2010/MISC.2.Add.1.

[175] Decision 2/CMP.5, Further Guidance Related to the Clean Development Mechanism (30 Mar. 2010) UN Doc FCCC/KP/CMP/2009/21/Add.1, para 29.

[176] Chiavari, cited *supra* note 166, p. 157.

leadership and address moral concerns; but also industry lobby to allow the first demonstration projects and facilitate the long-term commercialization of this technology.

A. Environmental Integration Dimensions

The Directive focuses on the regulation of CO2 *geological* storage,[177] providing for the removal of unintended barriers in existing legislation (notably, on waste and water).[178] It further explains its linkages with existing EU environmental law, clarifying that the Integrated Pollution Prevention and Control (IPPC) Directive[179] applies to capture[180] – given that it presents similar risks than chemical and power generation sectors[181] – and the Environmental Impact Assessment (EIA) Directive[182] applies to capture and transport, as well as to storage sites[183] – given that it presents the similar risks to transport of natural gas.[184] It is worth recalling that EIA outcomes will not necessarily result in specific permit conditions, as the obligation is to take them into account[185] leaving broad discretion to relevant authorities.[186] Furthermore, liability for local environmental damage caused by CCS is regulated by the Environmental Liability Directive,[187] and complemented by the inclusion of storage sites under ETS Directive.[188]

In terms of internal environmental integration, the regulatory system for CCS is premised on a selection of storage sites aiming to ensure the absence of significant risk of leakage and significant environmental or health risk.[189] The selection is preceded by an assessment taking into account proximity of the proposed project site to valuable natural resources, such as protected areas included in the Natura 2000 network, potable groundwater and hydrocarbons.[190] It also includes a risk assessment composed of exposure assessment[191] and effects assessment,[192] as well as other factors that could pose a hazard to human health or the environment.[193] The central regulatory tool is the storage permit, which is subject to review by the Commission leading to a non-binding opinion[194] to enhance public confidence.[195] The

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[177] For a more technical discussion, see Schurmans and van Vaerenbergh, "The new proposed EU legislation on geological carbon capture and storage (CCS): a first impression of the Commission's Proposed Framework on CCS", 17(2) *European Energy and Environmental Law Review* (2008), 90-105.

[178] Oberthür and Pallemaerts, see note 32 supra, p. 51. Specifically, amendment to Waste Framework Directive and to Regulation on Shipment of Waste to exclude CO2 captured and transported for the purposes of geological storage from their scope of application; and amendment to Water Framework Directive to allow injection of CO2 into saline aquifers for the purposes of geological storage, which is still subject to EU law provisions o the protection of groundwater: CCS Directive, cited *supra* note 22, preambular para 46.

[179] Directive 2008/1/EC concerning integrated pollution prevention and control [2008] OJ L24/8.

[180] CCS Directive, cited *supra* note 22, preambular para 16

[181] CCS proposal, cited *supra* note 19, at 2.

[182] Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment [1985] OJ L175 (EIA Directive).

[183] CCS Directive, cited *supra* note 22, preambular para. 17.

[184] CCS proposal, cited *supra* note 19, at 2.

[185] Schurmans and Vaerenbergh, see note 178 supra, 95.

[186] On interactions between the CCS Directive and the IPPC, EIA and waste directives, see de Graaf and Jans, "Environmental law and EEC in the EU and the impacts on the Netherlands" in Roggenkamp and Woerdman, cited *supra* note 165, pp. 157-184.

[187] CCS Directive, cited *supra* note 22, at preambular para 30.

[188] Ibid., Art. 17(2).

[189] Ibid., Art. 4(4).

[190] Ibid., Art. 4(3) and Annex I, Step 1(j).

[191] Ibid., Art. 4(3) and Annex I, Step 3.3.2. This takes into account the characteristics of the environment and distribution and activities of human population above the storage complex.

[192] Ibid., Annex I, Step 3.3.3. This takes into account the sensitivity of particular species, communities or habitats linked to potential leakage events.

[193] Ibid., Annex I, Step 3.3.1(e). See Skjaerseth and Wettestad, cited *supra* note 32, p. 97.

[194] Ibid., Art. 10.

application to obtain the permit needs to include a description of measures to prevent 'significant irregularities.'[196] (defined as any irregularity in the injection or storage operation which implies a risk to the environment or human health[197]). Permit conditions include observance of other relevant EU legislation.[198] Environmental safety is further guaranteed by the requirement to ensure that no waste or other matter may be added to the CO2 stream, and that concentrations of incidental and added substances do not pose a significant risk to the environment or breach requirements of other applicable Union law.[199] Monitoring to be carried out by the operator includes the surrounding environment for the purpose of, *inter alia*, detecting significant adverse effects, in particular to drinking water, human populations and users of surrounding biosphere.[200] Member States' competent authorities also check compliance with such monitoring obligations.

It should be also noted that provisions on public participation can serve to ensure internal environmental integration: in the case of the CCS Directive, a succinct provision on access to information[201] may facilitate the role of the public as watchdogs for the overall environmental sustainability of CCS activities. The requirement for Member States to make publicly available environmental information related to the geological storage of CO2[202] is coupled with public participation requirements under the EIA and IPPC Directives. It is, however, doubtful whether sufficient stakeholder involvement is provided for, given that under the EIA Directive there is no provision for consultation before environmental information is provided by the developer, so that there is no opportunity for public input when the necessity and scope of an environmental impact assessment is determined.[203]

When compared with the minimum guarantees called for by civil society,[204] the EU seems to have taken on board concerns related to CCS as add-on to energy efficiency, renewables and sustainable land use; safe and permanent storage in locations that do not allow leakage or gassing out assessed and confirmed through independent scientific review; and avoidance of open oceans and sea floor. It remains unclear, however, whether the provisions put in place at EU level will also preclude interference or negative direct or indirect impacts on biodiversity, given that the EIA Directive is not considered well-equipped to fully take into account biodiversity concerns.[205] Finally, civil society called for ruling out open aquifers and lakes,[206] which is not reflected in the EU Directive.

B. International dimensions

There are key international dimensions linked to the legislative effort by the EU to ensure internal environmental integration with respect to CCS. CCS is discussed at the international

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[195] Skjaerseth and Wettestad, cited *supra* note 32, p. 99.
[196] CCS Directive, cited *supra* note 22, at Art. 7(5).
[197] Ibid., Art. 3(17).
[198] Ibid., Art. 8.1(a).
[199] Ibid., Arts. 12(1)(b)-(c).
[200] Ibid., Art. 13(1)(e).
[201] Ibid., Art. preambular para 22 and Art. 26.
[202] Ibid., Art. 26.
[203] Lee, *EU Environmental Law: Challenges, Change and Decision-Making* (Hart 2005), p. 172.
[204] WWF, "Carbon capture and storage from fossil fuels" (Position Paper, undated) <http://assets.panda.org/downloads/wwfpositionstorage.doc> accessed 11 Nov. 2010.
[205] Commission, "Report on the application and effectiveness of the EIA Directive (Directive 85/337/EEC, as amended by Directives 97/11/EC and 2003/35/EC)" (Report) COM(2009) 378 final, 23 Jul. 2009, at 9.
[206] WWF paper, cited *supra* note 204.

level in several fora.[207] In addition to the ongoing discussions under the UNFCCC and the Kyoto Protocol, the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, has been amended to allow CCS in sub-seabed geological formations.[208] The latter development has been explicitly quoted in the preamble of the CCS Directive.[209] In addition, the EU prohibits storage in the water column and beyond the areas under the jurisdiction of its Member States,[210] taking on board the concerns raised within the Convention on Biological Diversity[211] and by the decision of the Parties to the OSPAR Convention to prohibit placement of CO2 in the water column and on the seabed.[212] Furthermore, one of the main purposes of the Directive is to bring a 'pioneering" example of domestic legislation inspired by internal environmental integration to the multilateral negotiations table as a source of inspiration for the development of international law and of national law.[213] Indeed, the recent EU[214] submission to the UNFCCC Subsidiary Body for Scientific and Technological Advice stresses that industrialized countries can 'take the lead' in developing and deploying CCS, mentioning the CCS Directive as "a useful example for enabling CCS in other jurisdictions, respecting legal, cultural, social and administrative differences."[215] There the EU outlines various suggestions for the inclusion of CCS in the CDM, based on its own legal tools for site-selection, monitoring, allocation of responsibility to one entity only, EIA (including social aspects - although these are not covered by the EU EIA Directive), risk assessment, requirements for the composition of CO2 streams, and liability.[216] To support its position before the other Parties to the Kyoto Protocol, the EU also explicitly links its available support to developing countries in terms of bilateral external action, mentioning its readiness to provide capacity-building and engage in collaborative research and development, exchange of views on policy issues including legal frameworks, as well as opportunities for scientific collaboration between EU and non-EU researchers on CCS.[217] This reflects the more generic reference to technology cooperation with key countries that was made in the CCS Directive preamble.[218]

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[207] On questions of applicable international law, see Brus, "Challenging complexities of CCS in public international law" in Roggenkamp and Woerdman, cited *supra* note 165, pp. 19-60.

[208] See IMO, "Report of the 31st Consultative Meeting of the Parties to the London Convention & 4th Meeting of Contracting of the Contracting Parties to the London Protocol" (30 Nov. 2009) LC 31/15, at Annex 5: Resolution Lp.3(4) on the Amendment to Art. 6 of the London Protocol; and Morgera, "Ocean Dumping (Year in Review 2010)", 20 *Yearbook of International Environmental Law* (forthcoming 2010).

[209] CCS Directive, cited *supra* note 22, at preambular para 12.

[210] Ibid., preambular para 18 and Arts. 2(3)-(4).

[211] Report of the second meeting of the Ad Hoc Technical Expert Group (AHTEG) on biodiversity and climate change, (28 Apr. 2010) UN Doc UNEP/CBD/SBSTTA/14/INF/21, which at para 162 reads: "The biological and chemical implications of deep-sea injection of carbon dioxide, associated with carbon capture and storage, are at present largely unknown, but could have significant adverse consequences for marine organisms and ecosystems in the deep sea. Leakage from carbon storage on the sea bed could increase ocean acidification, which could have large-scale effects on marine ecosystems, including coral reefs."

[212] OSPAR Commission, OSPAR Decision 2007/2 on the Storage of Carbon Dioxide Streams in Geological Formations, (25-29 Jun. 2007).

[213] Which seems to have not gone unnoticed, as specific references to EU domestic legislative initiatives were mentioned in the submissions on CCS by Indonesia and Norway, in UN Doc FCCC/SBSTA/2010/MISC.2, cited *supra* note 174, at 21 and 25 respectively.

[214] Supported by Croatia, Former Yugoslav Republic of Macedonia, Serbia and Turkey.

[215] UN Doc FCCC/SBSTA/2010/MISC.2, cited *supra* note 174, at. 32-33.

[216] Ibid., at 33-40.

[217] Ibid., at 41-42.

[218] CCS Directive, cited *supra* note 22, at preambular para 7.

6. RENEWABLE ENERGY

In addition to the CCS Directive, provisions emphasising internal environmental integration can be found in the Renewables Directive, which has three objectives: environmental sustainability, energy security and technology innovation.[219] In the context of the Package, it seeks to implement the EU's target of increasing the share of renewable energy to 20% of primary energy consumption and 10% of the energy used in the transport sector by 2020. This section will first introduce the overall legal scheme to support the achievement of the 2020 renewables targets, and then discuss more in detail the sustainability criteria for biofuels as a salient feature of the Package both in terms of internal environmental integration, as well as for their complex international dimensions.

The energy sector is engrained in the fabric of the European Union, dating as far back as the European Coal and Steel Community in the 1950s. EU legislation on renewable energy emerged in the late 1970s as a response to the oil shocks, and was initially conceived as distinct from climate change.[220] First environmental integration efforts in the EU energy policy were made in the context of the fuel quality standards and implicitly in the context of energy efficiency standards and research and development programmes. In the 1990s, electricity from renewable energy sources was considered in the context of electricity liberalization. The 1995 White Paper on an Energy Policy for the European Union[221] made clear that promotion of energy efficient technologies and energy conservation efforts were regarded as action designed to achieve both security of energy supply and environmental goals, and the objective of energy security was considered largely compatible with environmental integration. On the other hand, the push towards a common energy market was less compatible with environmental objectives.[222] In the early 2000s, EU legislation was adopted on renewable electricity[223], fuels[224] and heat.[225] The EU approach to renewables, though, was fragmented, with each sector having its own separate legislation.

Against this background, the Package signalled a shift in approach based on the integrated nature and inter-relationships between energy policy (comprising efficiency, security and renewables) and climate policy,[226] and within renewables, including all sectors under a single directive. This shift is also reflected in the new legal basis for the EU policy on energy inserted in the TFEU by the Treaty of Lisbon, where "regard for the need to preserve and improve the environment" is called for in all aspects of energy policy, namely: ensuring the functioning of the energy market; ensuring security of energy supply in the Union; promoting energy efficiency and energy saving and the development of new and renewable forms of energy; and promoting the interconnection of energy networks.[227] It should be noted that the TFEU has not changed the unanimity rule required for adopting measures that affect Member States' sources and structure of energy supply.[228]

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[219] Howes, "The EU's new Renewable Energy Directive", in Oberthür and Pallemaerts, see note 2 supra, pp. 117-150, p. 117.
[220] Ibid., p. 117.
[221] COM(95) 682 final, 13 Dec. 1995.
[222] See ch. 7 in Dhondt, cited *supra* note 11, pp. 441-449.
[224] Directive 2001/77/EC, [2001] OJ L283/33. For a history of the 2001 renewables directives, see Lauber, "2004. REFIT and RPS: options for a harmonised community framework", 32 *Energy Policy* (2004), 1405–1414.
[224] Directive 2003/30/EC, [2003] OJ L123/42.
[225] Directive 2002/91/EC, [2002] OJ L001 and Directive 2004/8/EC, [2004] OJ L52/50.
[226] Howes, cited *supra* note 219, p. 125.
[227] TFEU, Art. 194.
[228] TFEU, Art. 192(2)(c).

The overall legal framework supporting achievement of the 2020 target for renewable energy comprises five elements: obligatory national targets for 2020; national renewable energy action plans; flexible mechanisms allowing for cross-financing between Member States for the achievement of the EU target;[229] administrative and regulatory reforms; as well as biofuels sustainability criteria.[230] For the first time, Member States are to coordinate their approaches to a range of planning, certification and educational issues associated with the renewable energy sector (on the basis of both obligatory provisions and recommendations), against a new single target.[231] The targets must be consistent with a target of at least 20% share of energy from renewable sources in the EU's gross final energy consumption in 2020, which should be achieved also through energy efficiency and energy saving.[232] The legally binding and differentiated national targets for each Member States (see Table 1) represent a notch up in ambition from previously "indicative" targets, for example in Directive 2001/77/EC.[233] The national action plans are to determine sectoral targets for the share of energy from renewables consumed in transport, electricity, heating and cooling in 2020 and the measures to be taken to achieve national overall targets.[234] .It seems all Member States are on track to achieve them. The targets are coupled with the obligation for each Member State to achieve at least 10% of renewable energy consumption in the transport sector.[235]

As mentioned above, the Renewables Directive introduced flexible mechanisms aimed at facilitating the achievement of the 20% target. While most of the mechanisms focus on cooperation between the Member States, they also make it possible to count electricity purchased from third countries against the national target of a Member States. Article 6 enables *statistical transfers* between Member States. This mechanism can be compared to international emissions trading under Article 17 of the Kyoto Protocol whereby one country transfers part of its emissions quota to another country. Under Article 7, two or more Member States can also implement *joint projects,* which may involve private parties, that relate to the production of energy from renewable electricity, heating or cooling.[236] This mechanism is similar to Joint Implementation under Article 6 of the Kyoto Protocol, which enables two countries with emission reduction targets to implement climate-friendly projects and agree on the transfer of the ensuing emission reductions. Article 11 of the Renewables Directive also makes it possible to create *joint support schemes,* whereby two or more Member States may decide to join or partly coordinate their national support schemes, and a certain amount of renewable energy produced in the territory of one participating Member State may count towards the national target of another Member State.[237]

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[229] For a discussion on these market-based provisions of the Directive and their compatibility with the free movement of goods within the EU, see Johnston, Neuhoff, Fouquet, Ragwitz and Resch, "The proposed new EU Renewables Directive: interpretation, problems and prospects", 17(3) *European Energy and Environmental Law Review* (2008), 126-145.
[230] Howes, cited *supra* note 219, p. 126.
[231] Ibid., p. 137.
[232] Renewables Directive, cited *supra* note 23, at Art. 3(1).
[233] Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market [2001] OJ L283/33.
[234] Renewables Directive, cited *supra* note 23, at Art. 4.
[235] Ibid., Art. 3(4).
[236] Renewables Directive, cited *supra* note 23, Arts. 7.1 and 7.2. Art. 7.2 refers to projects becoming operational "after the date of entry into force of this Directive," which took place on 25 Jun. 2009.
[237] Ibid., Art. 11.

An international dimension to the Renewables Directive emerges from the third mechanism under Article 9, which focuses on *joint projects between EU Member States and third countries.* 238 While this provision will be of limited practical relevance to meet the 2020 targets, it establishes a framework for third-country projects which may be important to meet targets beyond 2020, and represents a lifeline to projects such as DESERTEC,[239] which is trying to deploy renewable electricity capacity in North Africa for European consumption. This mechanism has elements resembling the CDM established under the Kyoto Protocol, which allows developed countries to benefit from carbon credits generated in developing countries. It reinforces the international dimension of the Package and allows third countries to access finance for renewables infrastructure.[240] However, according to recent estimates by the Commission, the flexibility mechanisms will not play a major role in meeting the renewable energy target: only five Member States are not expected to meet their targets exclusively with domestic sources and only 1% of energy is expected to be traded between Member States or third countries.[241] It should further be noted that a standard clause in most Association and Partnership/Cooperation Agreements between the EU and third countries or regions systematically call for cooperation in renewables.[242] Thus, the EU has an additional legal basis, enshrined in an international bilateral treaty, for specifically supporting renewables in third countries: this type of clause may allow the EU to support the implementation of key provisions of the Renewables Directive beyond its borders, with the consent of the third country/region involved. The international dimension of the Renewables Directive becomes even more evident when focusing attention on its unprecedented sustainability criteria for the production of biofuels, discussed next.

7. Biofuels sustainability criteria

Biofuels have been in the international spotlight for several reasons, including concerns regarding food security, adverse environmental impacts and deforestation, additional pressure on dwindling land and water resources, potential negative effects on indigenous and local communities and small-holder farmers, as well as introduction and spread of genetically modified organisms or of invasive alien species.[243] In addition, the debate still continues on whether the use of biofuels reduces greenhouse gases and to what extent if the whole lifecycle analysis is considered.

To address those concerns, and to ensure that biofuels promoted by the Package avoided negative environmental impacts, particularly deforestation and loss of biodiversity, the EU introduced sustainability criteria - one of the most innovative features of the package.[244]

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[238] Ibid., Art. 9(1).
[239] <http://www.desertec.org.> accessed 9 Nov. 2010.
[240] Howes, cited *supra* note 219, pp. 134-135.
[241] Europa, "Renewable energy: forecasts show EU on track to meet 20% target" (Press Release) IP/10/265 (11 Mar. 2010) <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/265> accessed 11 Nov. 2010.
[242] See for instance, Arts. 109 and 111 of the Stabilisation and Association Agreement with Serbia (29 Apr. 2008); Art. 74 of the Euro-Mediterranean Agreement with Jordan (15 May 2002); Art. 57 of the Agreement on Trade, Development and Cooperation with South Africa (4 Dec. 1999); and Art. 16 of the Framework Agreement for Trade and Cooperation with South Korea (30 Mar. 2001).
[243] CBD, Subsidiary Body on Scientific, Technical and Technological Advice, "New and emerging issues relating to the conservation and sustainable use of biodiversity: biodiversity and liquid biofuel production" (25 Apr. 2007) UN Doc UNEP/CBD/SBSTTA/12/9. On the international debate on biofuels, see also Morgera, Kulovesi, and Gobena (Eds.), *Case Studies on Bioenergy Policy and Law: Options for Sustainability*, FAO Legislative Study No. 102 (FAO, 2010), pp. 15-34.
[244] The biofuels target and the sustainability criteria were subject to debate during the preparation of the Package especially from the point of view of environmental and social sustainability.

These criteria are also reflected in the Fuel Specification Directive, which includes, *verbatim*, all language from the Renewables Directive applicable to biofuels.[245]

The decision of the EU to adopt pioneering legislation containing sustainability criteria for biofuels should be placed in the broader context of ongoing negotiations in various multilateral fora on possible international standards in this respect.[246] In the context of the CBD, specifically, entrenched positions have been presented as to whether international standards should be developed to ensure maximizing the positive and minimizing the negative impacts of biofuels on the environment, biodiversity and local and indigenous communities.[247] In 2008, Parties to the CBD agreed that biofuel production and use should be sustainable in relation to biological diversity through the development and application of sound policy frameworks, research and monitoring of the positive and negative impacts of the production and use of biofuels on biodiversity and related socio-economic aspects, including those related to indigenous and local communities; strengthened development cooperation with a view to promote the sustainable production and use of biofuels; and encouraging the private sector to improve social and environmental performance of the production of biofuels.[248] The EU continues to support the development of international standards at the CBD,[249] mentioning its own sustainability criteria as a relevant example in that respect. This subsection will in turn look into the environmental integration aspects of the criteria, as well as their international dimension both in terms of WTO law compatibility and of inclusion in the EU bilateral external action.

a) Environmental integration

Similarly to the CCS Directive, the EU seems to have adopted legislation on biofuels with a view to showing leadership on a controversial issue. The EU domestic provisions represent an attempt to ensure *internal* environmental integration with a view to providing a good-practice example to other countries for action at the national level or to influence international negotiations.

The selection of criteria is purposely based on explicit references to MEAs and related international processes. Specifically, the criteria are land-related (concerning land with high biodiversity value and land with high carbon stock), which fulfill the internal dimension of the environmental integration principle, and on greenhouse gas emission savings (of at least

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[245] Art. 17 of the Renewables Directive, cited *supra* note 23, and Art. 7b of the new Fuel Specification Directive, cited *supra* note 59, read verbatim in all provisions regarding biofuels. The Renewables Directive contains additional text for bioliquids.

[246] EurActiv, "NGOs slam draft version of EU biofuel law" (11 Jan. 2008) <http://www.euractiv.com/en/transport/ngos-slam-draft-version-eu-biofuel-law/article-169470> accessed 9 Nov. 2010.

[247] Summary of the Fourteenth Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice to the CBD: 10-21 May 2010, Nairobi, Kenya, ENB vol. 9, n. 514, 24 May 2010, at 12-14**;** Subsidiary body on scientific, technical and technological advice (SBSTTA) to the CBD, "Biofuels and biodiversity: Consideration of ways and means to promote the positive and minimize the negative impacts of the production and use of biofuels on biodiversity" (Recommendations, Nairobi, 10 – 22 May 2010) <http://www.cbd.int/doc/meetings/sbstta/sbstta-14/in-session/sbstta-14-recommendations-en.pdf> accessed 11 Nov. 2010.

[248] CBD, COP decision IX/2, adopted at Ninth Conference, ibid., see <http://www.cbd.int/decision/cop/?id=11645> accessed 12 Nov. 2010.

[249] ENB 9:514, cited *supra* note 247, at 12.

35%[250]), which contribute towards environmental integrity. While these two sets of criteria apply both to imported biofuels and to those produced within the EU, an additional criteria of cross-compliance applies only to the latter. Thus, for biofules produced within the EU, the Directive requires compliance with existing requirements under EU environmental law for agriculture, including protection of groundwater and surface water quality and social requirements.[251]

With regards to biodiversity concerns, the Directive requires that biofuels and bioliquids must not be made from raw material obtained from land with high biodiversity value, namely: land that in or after January 2008 has the status of primary forest (according to the definition used by the FAO in its Global Forest Resource Assessment; and[252]) protected areas, unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes, or highly biodiverse grassland.[253] With regards to non-natural highly biodiverse grasslands, an exception is possible if harvesting of raw material was necessary to preserve the area's grassland status.[254] In addition, the Directive's preamble points to the possibility for the Commission to take due account of the Millennium Ecosystem Assessment[255] – the first scientific assessment of the consequences of ecosystem change on human well-being undertaken in 2005 - which contains useful data for the conservation of at least those areas that provide basic ecosystem services in critical situations such as watershed protection and erosion control.[256] For other biodiversity dimensions that are not explicitly covered by the sustainability criteria, the Directive provides complementary monitoring requirements: Member States are to report on estimated impacts of biofuels production on biodiversity, water resources, water quality and soil quality within their territories,[257] while the Commission is expected to report on possible broader impacts in Member States and third countries that are a significant source of raw material for biofuels consumed within the Union as to their ratification and implementation of the Cartagena Protocol on Biosafety and the Convention on the International Trade in Endangered Species.[258]

Another relevant criteria at the intersection of biodiversity and climate change concerns is the prohibition to derive biofuels from raw material obtained from land with high carbon stock, namely land that had in January 2008 and no longer has that status of wetlands (as defined in

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[250] Renewables Directive, cited *supra* note 23, Art. 17(2). The provision indicates that GHG saving will be of at least 50% by 2012, and 60% by 2018.
[251] Ibid., Art. 17(6), with refers specifically to compliance with heading 'Environment' in part A and in point 9 of Annex II to Council Regulation (EC) 73/2009 establishing common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers (1) and in accordance with the minimum requirements for good agricultural and environmental condition defined pursuant to Art. 6(1) of that Regulation, [2009] OJ L30/16. See also, Renewables Directive, cited *supra* note 23, preambular para. 74.
[252] Renewables Directive, cited *supra* note 23, preambular para 69.
[253] Ibid., Art. 17(3).
[254] Ibid., preambular para. 69; see also Commission, "Communication on the practical implementation of the EU biofuels and bioliquids sustainability scheme and on counting rules for biofuels" COM(2010) 160/02, 19 June 2010, [2010] OJ C160/8, at 8.
[255] Duraiappah and Naeem, "Millennium Ecosystem Assessment, Ecosystems and Human Well-being: Biodiversity synthesis" (World Resources Institute, 2005) < http://archive.wri.org/publication.cfm?id=4109&z=?> accessed 11 Nov. 2010.
[256] Renewables Directive, cited *supra* note 23, at preambular para 77.
[257] Ibid., Art. 22(3)(i).
[258] Ibid., Art. 17(7).

the Convention on Wetlands of International Importance[259]), or continuously forested areas or areas with 10-30% canopy cover.[260] Using such land for biofuels production would result in a negative net greenhouse gas emission reduction impact given that CO2 is released into the atmosphere as a result of land conversion[261] The Commission has indicated that monitoring compliance with land-related criteria can take the form of aerial photographs, satellite images, maps, land register entries and site surveys.[262]

While noting the importance of broader land use issues,[263] the final compromise did not provide for the inclusion of other environmental or social concerns in the sustainability criteria, but rather to task the Commission with biannual reports on the impact on social sustainability in the EU and in third countries of increased demand for biofuel, on the impact of the EU' biofuel policy on the availability of foodstuffs at affordable prices, in particular for people living in developing countries, and wider development issues, including the respect of land-use rights and implementation of listed human rights and labour conventions.[264] Thus, the matter is kept under review for the time being, with the possibility in the short-term (2012) for the Commission to propose 'corrective action, in particular if evidence shows that biofuels production has a significant impact on food prices.'[265] Similarly, the Commission is to report in 2012 and propose corrective action as to whether it would be 'feasible and appropriate to introduce mandatory requirements in relation to air, soil and water protection, taking into account the latest scientific evidence and the EU international obligations.'[266] This more cautious approach certainly reflects current impasses in multilateral negotiations, where discussions of social issues related to biofules, such as land tenure and food prices, as well as impacts on indigenous and local communities, remain very controversial.[267]

Provisions on public participation may also be instrumental in ensuring internal environmental integration. The Renewables Directive requires that the Member States ensure public information on the availability and environmental benefits of all different renewable sources of energy for transport. When the percentages of biofuels, blended in mineral oil derivatives, exceed 10% by volume, Member States shall require this to be indicated at the sales points.[268] In addition, the Commission is to create an online public transparency platform to facilitate and promote cooperation between Member States and make public relevant information that the Commission or a Member State deems to be of key importance to the Directive and to the achievement of its objectives,[269] but no specific mention of the

[259] Ibid., preambular para 73.
[260] Ibid., Art. 17(4).
[261] Ibid., preambular para 70.
[262] Communication on the practical implementation of the EU biofuels sustainability scheme, cited *supra* note 254, at 10.
[263] Renewables Directive, cited *supra* note 23, preambular paras. 85 and 89 refer to relevant questions of land degradation and desertification.
[264] Ibid., Art. 17(7).
[265] Ibid., Art. 17(7) last subpara.
[266] Ibid., Art. 18(9)(b).
[267] Disagreement on these issues was visible at the latest CBD scientific body meeting, where square brackets were placed around land security and numerous references to indigenous and local communities in Recommendation XIV/10b, "Biofuels and biodiversity…" (Recommendations adopted by the subsidiary body on scientific, technical and technological advice at its fourteenth meeting, Nairobi, 10-22 May 2010) <http://www.cbd.int/doc/meetings/sbstta/sbstta-14/in-session/sbstta-14-recommendations-en.pdf> accessed 11 Nov. 2010.
[268] Renewables Directive, cited *supra* note 23, Art. 21(1).
[269] Ibid., Art. 24.

sustainability biofuels criteria. The Commission has also stressed that although the Directive does not require Member States to make information public, they are encouraged to publish biofuels sustainability information in a consistent manner for all fuels, taking into account possible commercially sensitive character of a company's specific information.[270]

b) WTO law compatibility

During the Directive's preparatory process, a number of developing countries raised concerns over the compatibility of the planned biofuels sustainability criteria with WTO law, highlighting they could violate Article 2 of the WTO Agreement on Technical Barriers to Trade and impose "unjustifiably complex requirements on producers" and "impinge disproportionately on developing countries."[271] They also argued that the criteria could violate the General Agreement on Tariffs and Trade, including its Article XX because they distort international trade without suitable scientific justification or the support of international treaties.[272] Indeed, given that the sustainability criteria also apply to imported biofules, they can be expected to have practical implications on production in third countries wishing to export biofuels to the growing markets in the EU - which, as discussed above, is the Directive's intention. In principle, sustainability standards seeking to impact land use in foreign countries would seem to surface questions concerning WTO law and point towards the long-standing and controversial debate on the permissibility of trade measures triggered by the way in which a product is produced.[273]

However, the Commission was aware of the international trade implications of the sustainability criteria and the argument can also be made that the WTO aspect has been taken into consideration when drafting the Renewables Directive and, according to Scott, "those familiar with the contours of WTO law will perceive in the text of the Renewables Directive efforts to align the scope and application of the sustainability criteria with the multiple requirements of WTO law."[274] In other words, the criteria: apply to domestic and imported products; contain a range of qualifications and exceptions in a bid to ensure that they are no more trade-restrictive than necessary; make recourse to international standards where possible; and are cognisant of the importance of WTO- imposed due process demands.[275] From the point of view of WTO law, it is also relevant to note that compliance with the sustainability criteria is not a precondition for placing biofules on the EU market, although in practice it makes them uncompetitive as they cannot be counted against the 10% target. In other words, lack of compliance with these criteria does not lead to a ban on imports or use within the EU, but rather to a series of disincentives.[276] Specifically non-compliant biofuels are ineligible for: meeting the biofuels targets[277]; compliance with renewable energy obligations;[278] receiving biofuels consumption financial

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[270] Communication on the practical implementation of the EU biofuels sustainability scheme, cited *supra* note 254, at 6.

[271] The countries include Argentina, Brazil, Colombia, Malawi, Mozambique, Sierra Leone, Indonesia and Malaysia. See, "Open Letter to the Council, Parliament and the Commission of the European Communities" (6 Nov. 2008) <http:// www.r-e-a.net/document-library/thirdparty/081010DevlopingCountriesLettertoEU.pdf> accessed 11 Nov. 2010.

[272] Ibid.

[273] The directives specifically talk about "production pathways", e.g. Renewables Directive, cited *supra* note 23, at 82.

[274] Scott, "The Multi-Level Governance of Climate Change" (Law and Governance in Europe Working Paper Series, 009/10), pp. 58-59, forthcoming in Craig and de Búrca, *The Evolution of EU Law* (OUP).

[275] Ibid.

[276] Communication on the practical implementation of the EU biofuels sustainability scheme, cited *supra* note 254, at 2-3.

[277] Renewables Directive, cited *supra* note 23, Art. 17(1)(a).

support;[279] meeting the Fuel Quality Directive GHG emissions reductions targets;[280] investment and/or operating aid in accordance with the Guidelines on state aid for environmental protection;[281] and the provisions for alternative-fuel vehicles.[282]

It should be noted that in February 2010 the Commission indicated that it did not intend to recommend binding sustainability criteria for solid biomass and biogas used in electricity, heating and cooling, but suggest voluntary criteria for Member States to include on national schemes, with the possibility to review this decision in 2011[283] given that the relevant impact assessment indicated that 'no policy tool can give certainty that forests will be regenerated after biomass is harvested.'[284]
Member States are expected to check operators' compliance[285] with the sustainability criteria via three methods: a national system – i.e. requesting operators to provide national authorities with data on compliance[286] subject to independent auditing of the information submitted;[287] a voluntary scheme recognized by the Commission for that purpose;[288] or a bilateral or multilateral agreement concluded by the EU, recognized by the Commission for this purpose.[289] While national systems will be based on the default values set by the Renewables Directive to show compliance with the GHG emission savings, the other two systems may also cover other sustainability issues that are not covered by the Directive.[290]

c) Bilateral external dimension

Not only are the sustainability criteria systematically invoked by the EU in multilateral negotiations on biofuels,[291] but they also have a bilateral international dimension. Motivated by the concern that biofuels production in third countries might not respect minimum environmental or social requirements and the aim to promote the production of biofuels and bioliquids *worldwide* in a sustainable manner,[292] the Directive indicates that the EU will endeavour to conclude bilateral or multilateral agreements with third countries containing provisions on the sustainability criteria.[293] This could also be seen in the context of WTO law: in the *Shrimp-Turtle* case it was found that the US (unsuccessful) bilateral negotiations

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[278] Ibid., Art. 17(1)(b).
[279] Ibid., Art. 17(1)(c).
[280] Art. 7 of the Fuel Specification Directive, cited *supra* note 59, which embodies the same provisions that can be found in the Renewables Directive, cited *supra* note 23, Arts. 17-19 and Annex V (at Arts. 7(b)-(d) and Annex IV respectively). On this, see Communication on the practical implementation of the EU biofuels sustainability scheme, cited *supra* note 254, at 3.
[281] Notice [2008] OJ C82/01.
[282] For E85 ethanol only, Regulation (EC) 443/2009 on CO2 from passenger cars, [2009] OJ L140/1, Art. 6.
[283] Europa, "Commission adopts Biomass Sustainability Report" (Press Release) IP/10/192 (25 Feb. 2010).
[284] Commission Staff Working Document, "Summary of the Impact Assessment accompanying the Report from the Commission to the Council and the European Parliament on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling" SEC(2010) 66 final, 25 Feb. 2010.
[285] Renewables Directive, cited *supra* note 23, Art. 17(8). Communication on the practical implementation of the EU biofuels sustainability scheme, cited *supra* note 254, at 6. On the question of harmonization, see Scott, cited *supra* note 274, pp. 55-56.
[286] Renewables Directive, cited *supra* note 23, Art. 18(3). On this, see also Communication on the practical implementation of the EU biofuels sustainability scheme, cited *supra* note 254, at 4.
[287] Ibid., Renewables Directive, Art. 18(3).
[288] Ibid., Arts. 18(4) and 18(7).
[289] Ibid., Arts. 18(4) and 18(7).
[290] Commission, "Communication from the Commission on voluntary schemes and default values in the EU biofuels and bioliquids sustainability scheme" COM(2010) 160/01, 19 Jun. 2010,[2010] OJ C160/1, at 4-5.
[291] (11 Feb. 2010) UN Doc UNEP/CBD/SBSTTA/14/12, para 12.
[292] Renewables Directive, cited *supra* note 23, preambular para 74 (emphasis added).
[293] Ibid., Art. 18(4).

with countries targeted by its environmental trade restrictions were relevant for determining WTO law compatibility of the measure.[294] To this end, the Directive specifically requires due consideration for measures taken for the conservation of areas that provide in critical situations basic ecosystem services and states that the Commission may also recognize areas for the protection of ecosystems or species protected by international agreements for the purposes of taking into account land, labour and additional environmental concerns not covered by the sustainability criteria, or included in lists drawn up by intergovernmental organizations or The International Union for Conservation of Nature (IUCN) for the purposes of fulfilling the high biodiversity value land criteria.[295] In addition, the Directive calls upon the Commission to maintain a dialogue and exchange information with third countries and biofuels producers, consumer organizations and civil society concerning the general implementation of the Directive, and in particular the impact of biofuels production on food prices.[296] Finally, the Commission is required to monitor the origin of biofuels and the impacts of their production on land use in third countries of supply with a view to analyzing the impact of increased demand for biofuels on sustainability in these countries, considering economic and environmental impacts, including on biodiversity

This is reflected in the external action instruments used by the EU in its relations with third countries..[297] While specific cooperation on biofuels is not mentioned in the Association and Partnership/Cooperation Agreement between the EU and third countries (beyond what can be implied by more generic obligations on cooperation on renewables mentioned above), the Sustainability Impact Assessments that assess the trade component of the Union agreements with third countries to address trade-offs between economic growth and its environment and social impacts, have in some instances, included certification for biofuels among policy recommendation to ensure sustainability[298] or even more specifically made reference to the Renewables Directive and its criteria as guidance for third countries.[299]

Overall, the sustainability criteria for biofuels clearly take into account a great variety of environmental concerns in an attempt to satisfy internal environmental integration. They do so, however, in a phased approach, that has prioritized certain biodiversity concerns and allows for early review to reflect progress in multilateral negotiations. This is tightly linked to the international dimensions of the Package, as the EU actively promotes such a holistic approach to biofuels showcasing its sustainability criteria not only through its interventions in relevant multilateral fora, but also through its bilateral relations. It remains to be seen how effective the criteria will be in third countries, given the reliance on economic operators and independent auditors for its enforcement, and the oversight role left for the Commission considering its limited resources for fulfilling its monitoring obligations.[300] It has also been

[294] WTO Appellate Body report, "United States - Import Prohibition of Certain Shrimp and Shrimp Products, Recourse to Article 21.5 of the DSU by Malaysia" (22 Oct. 2001) WT/DS58/AB/RW.
[295] Ibid.
[296] Renewables Directive, cited *supra* note 23, Art. 23(2).
[297] Combined reading of Renewables Directive, ibid., Art. 23(1) and 23(5)(b).
[298] IARC, Institute for Development Policy and Management, "Trade Sustainability Impact Assessment of the Association Agreement under Negotiation between the European Community and MERCOSUR" (Final Report) (Mar. 2009), p. 99; ECORYS Research and Consulting, "Trade Sustainability Impact Assessment of the Association Agreement to be negotiated between the EU and Central America" (Draft Final Report) (Rotterdam 7 Jul. 2009), pp. 90-91.
[299] ECORYS Research and Consulting, "Trade Sustainability Impact Assessment of the FTA between the EU and ASEAN" (Final Report) (Rotterdam 19 Jun. 2009) Volume I, Main Findings and Recommendations, pp. 60-61.
[300] Scott, cited *supra* note 274, pp. 56-58.

noted that corrective measures envisaged by the Directive in case of negative reports on sustainability in third countries will most likely entail a policy declaration, to avoid any WTO law incompatibility issues.[301]

8. CONCLUSIONS

This analysis shows that the contribution of the EU's Climate and Energy Package to the goal of environmental integration is, at least on paper, significant. The EU has attempted to mainstream climate change considerations into a range of sectors (external environmental integration), which is necessary given the multitude of activities and actors that must be engaged to effectively mitigate greenhouse gas emissions. The EU ETS plays an important role in this regard as setting a price for greenhouse gas emissions is commonly viewed as one of the most important mitigation tools.[302] The Package has contributed to this objective, first, by affirming that emissions trading will continue in the EU regardless of international climate policy developments and possible second commitment period under the Kyoto Protocol. The Package has also extended the carbon price signal by broadening the scope of the ETS both in terms of activities and greenhouse gases covered. Finally, the Package has also provided more certainty concerning the scale of emission reductions required in the ETS sector by including in the Directive provisions on a linearly declining, EU-wide emissions cap. As discussed above, however, setting the price signal and emissions cap at the right level has proven difficult - without new measures for the third trading period, the effectiveness of the ETS in promoting low-emissions investment is questionable. Binding emission reduction targets for Member States in sectors not covered by the ETS, through the Effort-sharing Decision, also contribute to external environmental integration, as do measures to implement the 20% energy efficiency target. For example, car manufacturers have been subjected to a binding obligation to reduce greenhouse gas emissions from their average fleet. In addition, the tighter links between the EU climate policy and energy policy certainly contribute to climate change mainstreaming in several sectors.

Through the Package, the EU has also attempted to "increase positive and reduce negative impacts of climate change mitigation and adaptation measures on biodiversity",[303] consistent with the internal dimension of environmental integration. The most obvious examples of internal integration in the Package are the legal tools chosen to ensure the environmental sustainability of CCS projects and the sustainability criteria for biofuels. The CCS Directive is remarkable in that it is the first piece of legislation in the world aiming to create a legal framework for environmentally safe CCS projects. The Directive promotes internal integration, *inter alia*, through links to other EU environmental legislation, such as the IPPC and EIA Directives, to ensure that broader environmental considerations are taken into account when using CCS to mitigate climate change. As to biofules, the 10% renewable energy target in the transport sector was perhaps the most controversial element of the Package with strong concerns voiced concerning its environmental and social implications. This led to the inclusion in the Package of detailed sustainability criteria for both EU

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[301] Vedder, cited *supra* note 8, 9.

[302] According to the IPCC, "An effective carbon price signal could realize significant mitigation potential in all sectors." "Summary for Policymakers" in Metz, Davidson, Bosch, Dave and Meyer (Eds.), *Climate Change 2007. Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2007), p. 19. According to the Stern Review, "The first essential element of climate change policy is carbon pricing. Greenhouse gases are, in economic terms, an externality: those who produce greenhouse gas do not face the full consequences of the cost of their actions themselves." Stern, cited *supra* note 70, p. 349.

[303] This is an expression recently adopted within the CBD SBSTTA Recommendation XIV/5, "In-depth review of the work on biodiversity and climate change," see (30 Jun. 2010) UN Doc UNEP/CBD/COP/10/3, para 8(u).

produced and imported biofuels. The sustainability criteria provide a clear example of internal integration as they attempt to ensure that the production of biofules in the EU or in foreign countries does not lead to biodiversity loss[304] while also achieving a minimum level of greenhouse gas emission savings[305] The analysis of the Package through the lens of the environmental integration principle has thus helped to explain the EU's efforts to play a global leadership role in the fight against climate change through its attempts to use the Package to influence multilateral negotiations, such as under the CBD and Kyoto Protocol, to ensure that also other relevant international regimes reflect environmental integration. In addition, the EU clearly expects the Package to act as models for other countries on an individual basis.

Against this background, the Package clearly reflects the EU's desire to pioneer innovative and sustainable responses to climate change. Under the UNFCCC negotiations, the EU has frequently highlighted elements of the Package and encouraged other Parties to adopt similar measures. The interdependence of the international and European dimensions is also reflected in the way EU legislation is drafted with direct references to international instruments and notable review clauses in the Package linked to developments in ongoing international negotiations.[306] However, the internationalizing approach to European law-making has also surfaced questions concerning the compatibility of parts of the Package with WTO law. This concerns especially provisions related to carbon leakage and the possible carbon equalizer system in the context of the EU ETS and the biofuels sustainability criteria in the Renewables Directive. The idea of requiring developing country importers to purchase credits under the ETS has also surfaced concerns over its compatibility with the principle of common but differentiated responsibilities under the UNFCCC. Both have also been recognised by the Commission. It has been argued that EU's efforts to influence global developments through its internal environmental legislation can be seen as a strategy to shield EU law from WTO challenges by putting pressure on other jurisdictions to adopt similar environmental legislation and/or adopt corresponding international standards, thus protecting the competitive interests of European companies that have to comply with high-standard environmental regulation.[307] However, another explanation is that for the EU to fulfil its environmental integration principle and its objective of pursuing global solutions to climate change, the main driver of the globalization of EU law is that of promoting holistic environmental multilateralism with the secondary effect of 'running the risk" of WTO law incompatibility. The present analysis of the key elements of the Package (particularly concerning carbon leakage and sustainability criteria for biofuels) reveals how the EU carefully calculates such risk and attempts to avoid solutions that would be clearly incompatible with the WTO Agreements.

This article has also highlighted some of the complex and increasingly more explicit interactions between both the EU's position under multilateral fora and its domestic legislation with the EU's *bilateral* external relations. Bilateral relations are used by the EU to support the implementation of multilateral environmental obligations in third countries (particularly developing ones), as well as to create or strengthen alliances with third countries

[304] However, the outcome concerning indirect land-use change has been considered as weak. Phillips, "European Parliament capitulates on biofuels deal" *EuObserver* (5 Dec. 2008) <http://euobserver.com/9/27236> accessed 10 Nov. 2010.
[305] For criticism of this approach, see conclusions by Vedder, cited *supra* note 8.
[306] See, for example, Arts. 10b and 11a.of the EU ETS Directive, cited *supra* note 20, and Arts. 5.2, 5.3, 8 and 9 of the Effort-Sharing Decision, cited *supra* note 21.
[307] Kelemen, cited *supra* 6.

with a view to influencing ongoing multilateral negotiations.[308] This usually builds on the environmental cooperation clauses that can be found in the various Association, Cooperation and Partnerships Agreements concluded by the EU with third countries,[309] which are usually coupled with significant development cooperation and policy dialogue.[310] They can be seen as a necessary complement to EU ambitious domestic action on climate change, with a view to fulfilling the principle of common but differentiated responsibilities. While it is difficult at this stage to assess the extent to which EU bilateral relations are effectively contributing to mainstreaming climate change in other policy areas and supporting holistic and environmentally sustainable responses to climate change in third countries, it can be stated that these interactions are likely to increase in the near future:[311] in the wake of the UN Climate Change Conference in Copenhagen, the European Parliament adopted a resolution calling for mainstreaming climate change in bilateral external relations;[312] and, in the second revision of the Cotonou Agreement – the world's largest economic and political framework for North-South cooperation, involving seventy-nine African, Caribbean and Pacific countries – the EU and the African, Caribbean and Pacific (ACP) countries recognize for the first time the global challenge of climate change as a major subject for their partnership, committing to raise the profile of climate change in their development cooperation, and to support ACP countries' mitigation and adaptation efforts.[313] As pointed out in the previous sections, this bilateral external dimension is increasingly reflected in the way EU 'domestic'

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[308] For a detailed discussion, see Morgera and Marín Durán, *Environmental Integration in the EU External Relations: Beyond Multilateral Dimensions* (Hart, forthcoming 2011). In the specific context of climate change, see Piebalgs, European Commissioner for development, "ACP-EU Parliamentary Assembly" (Speech at the ACP-EU Parliamentary Assembly, Tenerife 29 Mar. 2010) <http://europa-eu-un.org/articles/en/article_9631_en.htm> accessed 10 Nov. 2010, where Piebalgs proposed increasing cooperation in the area of climate change under the ACP-EU framework, and increased policy dialogue on climate change, to better understand needs and expectations, share positions, and possibly promote convergence of visions ahead of the next UNFCCC Conference of the Parties in Cancun, Mexico, at the end of 2010.

[309] References to cooperation in the specific field of climate change can be found at: Art. 54, Partnership and Cooperation Agreement with Kazakhstan (28 Jul. 1999); and Art. 103, Stabilisation and Association Agreement with Croatia (28 Jan. 2005). Otherwise, more general cooperation clauses on global environmental issues or on the implementation of MEAs that parties to the Agreement are parties to can also serve this purpose.

[310] Marín Durán and Morgera, "Towards environmental integration in the European Community's external relations? An analysis of selected association Agreements" 6 YEEL (2006), 179-210. In terms of climate-specific external initiatives of the EU, see Commission, EU Action Plan on Climate Change and Development, COM(2003) 85 final, 11 Mar. 2003; Commission, "Building a global climate change alliance between the European Union and poor developing countries most vulnerable to climate change" (Communication) COM(2007) 540 final, 18 Sept. 2007; and funding for both in the Thematic Programme for environmental and sustainable management of natural resources including energy, COM(2006) 20 final, 25 Jan. 2006. For an overview, see Ayers, Huq and Chandani, "Assessing EU assistance for adaptation to climate change in developing countries: a Southern perspective" in Oberthür and Pallemaerts, cited *supra* note 2, pp. 231-250, especially pp. 236-237.

[311] Morgera, "Relevance Beyond Borders…, cited *supra* note 31.

[312] European Parliament resolution on the outcome of the Copenhagen Conference on Climate Change, 10 Feb. 2010, para 7, where it "urged the EU to agree on a 'Roadmap for Mexico' which will include the discussion of climate policies in every strategic partnership and bilateral and multilateral cooperation agreement in order to create a more coherent external climate protection strategy." <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2010-0019+0+DOC+XML+V0//EN> accessed 11 Nov. 2010.

[313] See "Renewed impetus in the fight against poverty: EU and ACP states initial revised Cotonou Partnership Agreement" (EU Press Release) (19 Mar. 2010) <http://europa-eu-un.org/articles/en/article_9596_en.htm> accessed 10 Nov. 2010, and Second revision of the Cotonou Agreement – agreed consolidated text, (11 Mar. 2009), preambular para 13bis and Arts. 1, 11(1), 20(2), 29(3)(a) and 32 bis – the latter is a whole new article devoted specifically to climate change cooperation, <http://ec.europa.eu/development/icenter/repository/second_revision_cotonou_agreement_20100311.pdf> accessed 11 Nov. 2010.

law is framed and implemented, as demonstrated by references to bilateral agreements and initiatives with third countries in the Package, such as those related to climate funding and the expansion of the global carbon market under the EU ETS Directive, capacity building and collaborative research under the CCS Directive, joint projects under the Renewables Directive and cooperation on the biofuels sustainability criteria.

The overall conclusion is that the Package represents an innovative and comprehensive approach, aiming to integrate climate change considerations into various economic sectors and activities within the EU, while at the same time ensuring that climate change mitigation is compatible with other environmental objectives. Such an integrative approach is important given the scale of the economic and social transformation needed in the coming decades to avoid dangerous anthropogenic climate change. At the same time, it is clear that the targets underlying the Package are not ambitious enough to effectively combat climate change, to secure the environmental sustainability of climate change measures, or to achieve a radical transformation of the EU's economy. As explained above, this is well-known to the Commission and the Member States, and the possibility of the EU increasing its emission reduction target from 20% to 30% from 1990 levels by 2020 is currently being debated.[314] Under the UNFCCC negotiations, the EU has certainly come under pressure from developing countries and environmental NGOs to implement the 30% target, which is more in line with the requirements of climate science than the current 20% target, and would also convey a stronger message of the EU's global leadership in the fight against climate change. From the point of view EU domestic law, a decision to implement the 30% target would require further policies and measures, as the Package in its present form is only designed to achieve the EU's unilateral 20% target. In any case, it is clear that far more ambitious emission cuts and measures will be needed between now and 2050 for the EU to achieve its objective of cutting greenhouse gas emissions by 85% or more by 2050. Equally, the legal tools deployed by the EU to prevent or minimize possible negative environmental impacts of climate change mitigation measures, such as the phased approach to the sustainability criteria for biofuels production, represent an initial step, that may well anticipate action by other countries, but that nonetheless remain limited. To this effect, the Package constitutes a good starting point but deeper integration of climate change considerations into various economic sectors, coupled with stronger guarantees for the environmental sustainability of climate change measures, will be required.

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[314] In October 2010, the Council resolved to continue to examine options to move beyond the 20% greenhouse emission reduction target to be prepared to react to the ongoing international climate negotiations, see Council, "Analysis of options to move beyond 20% greenhouse gas emission reductions and assessing the risk of carbon leakage" (Environment Council Conclusions, Press Release, 14 Oct. 2010).

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